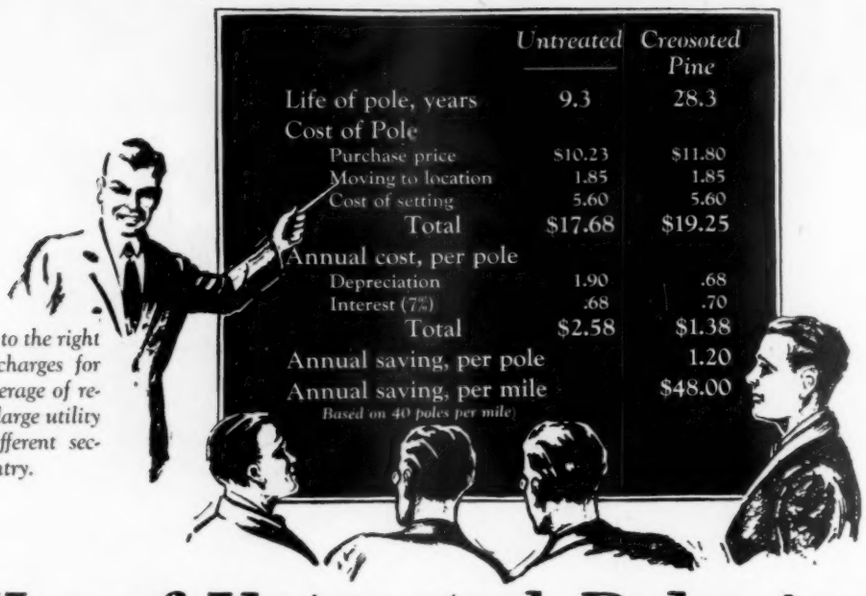
10¢ A COPY

The OIL WEEKLY

Exclusively Devoted To The Production and Transportation of Oil and Gas



The figures given to the right are the annual charges for 6″-30′ poles---average of reports from three large utility companies in different sections of the country.

"The Use of Untreated Poles is an Economic Waste -- an Unnecessary Burden on the Company and on . . . the Public"

THIS is a time of the year for checking up on past operations and laying plans for the future.

Give consideration to the economies which may be effected in the operation of your business by adopting the policy of specifying Creosoted Southern Yellow Pine for all pole replacements and construction of new lines.

Disinterested authorities conservatively estimate the minimum service life expectancy of properly-creosoted Pine poles at 35 years (many have been serving that long and are still sound and apparently good for years more), which is at least four, or more, times the life of untreated poles under average service conditions.

The proved, lower per-annum cost of properly-creosoted Pine poles, as opposed to untreated poles of any species commercially available, points the way to lower the outgo for maintenance, and increase net earnings.

Four Times As Costly As Treated Poles

Consider the cost of poles and setting, alone. One properly-creosoted Southern Yellow Pine Pole will serve without need for inspection, stubbing, or guying for at least 35 to 40 years. During this period of time only one pole and one installation cost are necessary. On the other hand, untreated poles must be replaced every eight to ten years. That means four poles and four separate installation costs, during the same length of time.

Save By Preventing Service Interruptions

When wind and sleet storms, or other severe stresses come, the decay-weakened, termite-eaten, untreated poles---the records of dozens of companies on thousands of poles show---are the ones that go down and cause the unnecessary service interruptions, with their resultant losses and high replacement costs.

¶ We would appreciate the opportunity to submit "Evidence" of the true economy of using "Black Beauty" Poles---and the relative value they offer per dollar of investment.

TEXAS CREOSOTING COMPANY

Main Office and Plant: ORANGE, TEXAS, U. S. A.

Sales Representatives:

DALLAS, TEXAS
Texas Creosoting Co.
510 Dallas Natl. Bank Bldg.

LOS ANGELES, CALIF.
W. W. Wilkinson
1213 Insurance Ex. Bldg.

TULSA, OKLA.
Electric Appliance Co.,
213 E. Archer St.

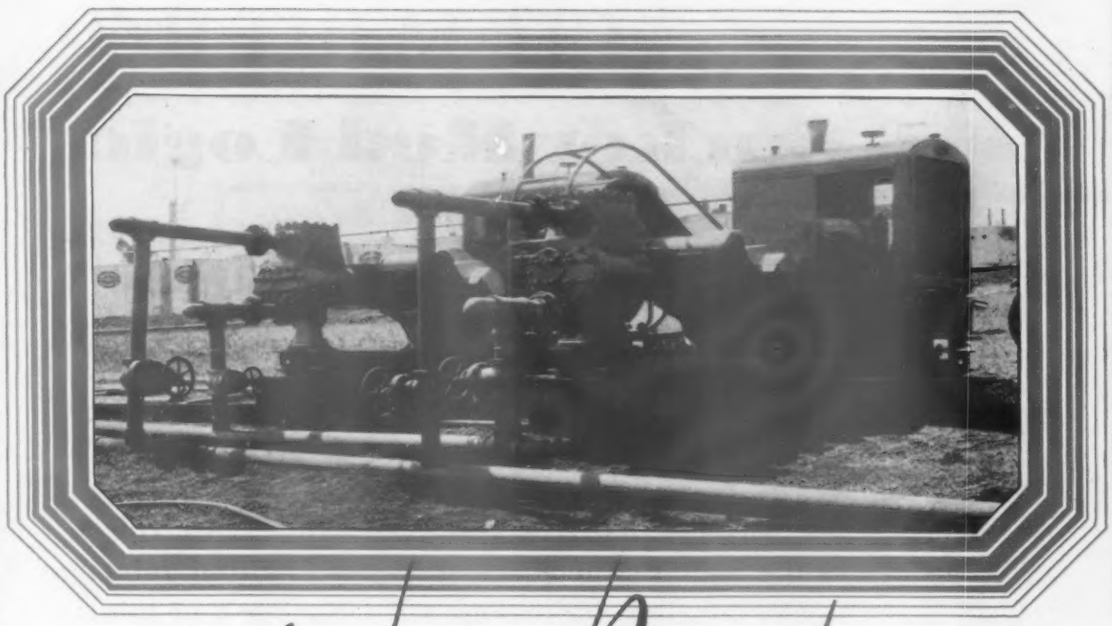
KANSAS CITY, MO.
American Electric Co., Inc.,
622 Wyandotte St.

HOUSTON, TEXAS
1203 Esperson Bldg.

A PROVED GUARDIAN OF INVESTMENTS

"Black Beauty" Poles

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1897.



A Super Pump . . . designed for Super Service

SELF LUBRICATING

TIMKEN ROLLER BEARINGS

BABBIT LINED

BUDA ENGINE

This Portable Pumping Unit—consisting of our GASO No. 710 Enclosed Type, Self-Lubricating Power Pump with Tex-Rope Drive from a BUDA 85 H. P. gas or gasoline engine—combines the highest efficiency with extreme ruggedness and durability.

Every working part of this pump runs in oil in an oil-tight case. Pinion shaft bearings are TIMKEN TAPER ROLLER BEARINGS and main bearings are babbit lined—both being easily adjustable to wear. Open hearth steel, continuous tooth, herringbone gears, center driven, running in oil, insure quietness and high efficiency.

Interchangeable liners from 2½-in. to 7-in. diameter give capacities from 38 gallons per minute at 1400 lbs. pressure to 351 gallons per minute at 300 lbs. pressure.

Write, wire or phone for complete information,

GASO PUMP & BURNER MFG. CO. .. *Tulsa, Oklahoma*

Texas Office; 210 Petroleum Building, Fort Worth

GASO PUMPS

for every oil industry need

Sucker Rod Logic and Common Sense

NO CONTRACTOR can afford to allow a driller to set up a tool joint covered with sand or dirt—that is obvious.

But why not apply the same common sense rules in the handling of Jones H. M. Sucker Rod Joints —why not consider that an A.P.I. Sucker Rod Joint is practically a tool joint.

Just because Jones Sucker Rods have been proved to be by every field and laboratory test, the strongest rods ever built, is no reason why they should be carelessly handled.

When you consider that Jones Sucker Rods are often called upon to lift a 10,000 pound load more than 28,000 times a day, you can appreciate the severe service to which sucker rods are subjected.

Must they then, be needlessly handicapped with avoidable kinks and dirty joints?

THE S. M. JONES COMPANY

TOLEDO, O., U. S. A.

Mid Continent Office—McBirney Bldg., Tulsa, Okla.

JONES SUCKER RODS

BOND THEM THIS WAY-

Showing a service-worn Texas Pipe Line being cleaned, reconditioned and protected with Carey Asbestos Pipe Line Felt. Many more years of service, now!

put them out of your mind!

PROTECT those pipe lines, new or reconditioned, with Carey Asbestos Pipe Line Felt. Flint-hard asbestos, lasting asphalt. Sinewy, flexible, tensile-tough—lasting armor against water and chemical-bearing soils. Economical—quickly and easily applied. Cannot crack, crease or crawl. Ask us to tell you more.

Special Industries Department

THE PHILIP CAREY COMPANY

Lockland, Cincinnati, Ohio

R. B. Hall, Special Mid-Continent Representative
417 Magnolia Bldg.,
Dallas, Texas

Carey ASBESTOS PIPE LINE FELT

Say you saw it in The OIL WEEKLY

THRU HARD OR SOFT *it keeps* DIGGING DIGGING DIGGING

This dual purpose bit enables you to keep digging right through hard or soft formations, eliminating frequent pulling of the string to change bits. The W. K. W. digs through hard as well as soft formation. It rips and tears its way downward, gnawing and gouging through all types of formation. The teeth are staggered and the hole is progressively cut, each tooth ripping away formation. The greatest area of cutting surface contacts the hole. Working toward the center, each tooth at different elevations, progressively rips its share of the formation and the cuttings are chopped into fine particles which are easily carried away by the circulation.

The bit embodies the feature of a reamer, offering cutters at the side, assuring a full sized hole. When running in a new bit it can be started at the bottom, requiring no reaming down of the hole.

PIN TYPE
Patents Pending

Catalog Upon Request

Wieman-Kammerer-Wright Co.
Incorporated

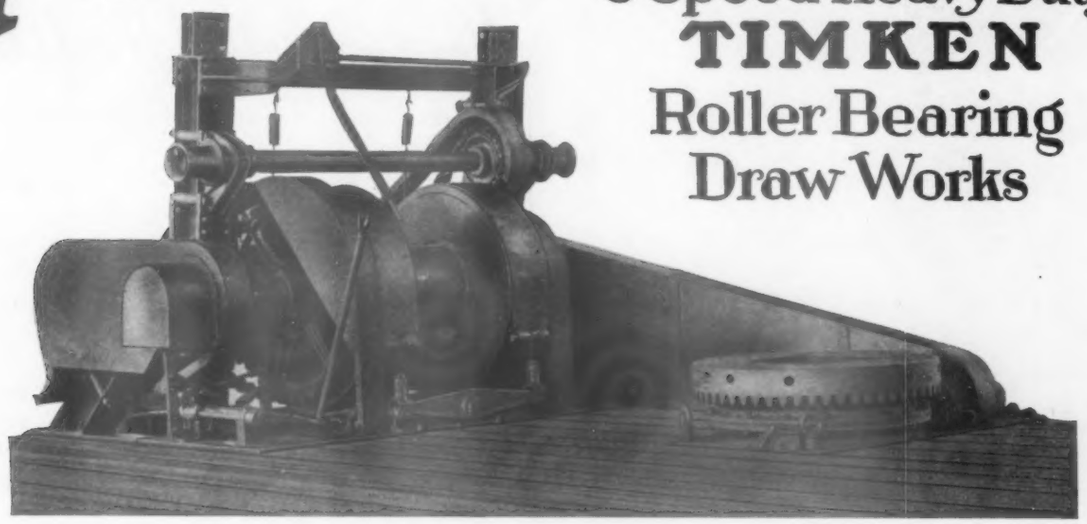
Hollydale (Los Angeles County) *California*

Mid-Continent Distributors: Continental Supply Co.
Export Office: 150 Broadway, New York

W·K·W WAY AHEAD DRILLING BIT

New!

Horizontal Drive 3 Speed-Heavy Duty TIMKEN Roller Bearing Draw Works



Straight Line Load Pull

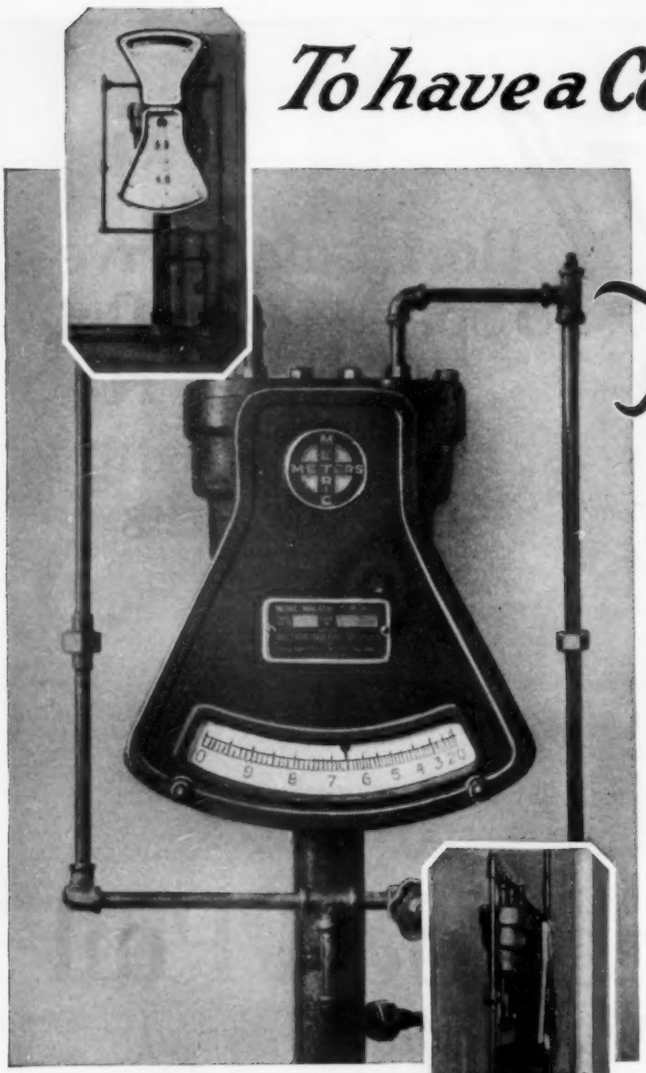
(Eliminates Vertical Drive Chain Trouble)

This new and improved Draw Works again emphasizes Lucey leadership in the interest of establishing more efficient equipment for the cheaper production of oil. It will give us pleasure to send you complete details.

Offices
NEW YORK
3505 Woolworth Bldg.
LONDON
54 Old Broad St., E. C., 2
PARIS (1er)
55 rue de Rivoli
TULSA
224 E. Brady St.
HOUSTON
P. O. Box 609
LOS ANGELES
5043 Santa Fe Ave.
SHREVEPORT
P. O. Box 116
DUNCAN, OKLA.
HEALDTON, OKLA.

PRODUCTS LUCEY CORPORATION WHEREVER THERE'S OIL

Distributors:
LOS ANGELES
Oil Well Equipment Corp.
CASPER, WYO.
Champion Supply Co.
HOUSTON
T. T. Word Supply Co.
FT. WORTH and WINK
Hercules Supply Co.
WICHITA FALLS
Bradford Supply Co.
TULSA
International Supply Co.
WICHITA
Bridgeport Machine Co.
PLOESTI, ROUMANIA
SAN FERNANDO, TRINIDAD, B.W.I.



To have a Constant Indication of the Flow of Fluids and Gases

This is What you Need

Where doubt exists as to the flow through lines in refinery process work; where it would result in economy and better operating results to know constantly what the flow is—in fact, in almost every service where the knowledge of changes in the rate of flow is of importance, the Metric Indicating Flow Meter will tell you what the rate is.

The dial numbers are large enough to be seen from considerable distance, and they are graduated to read from zero to 10, or for any readings desired, in cubic feet, gallons, barrels, per minute, per hour, or per day.

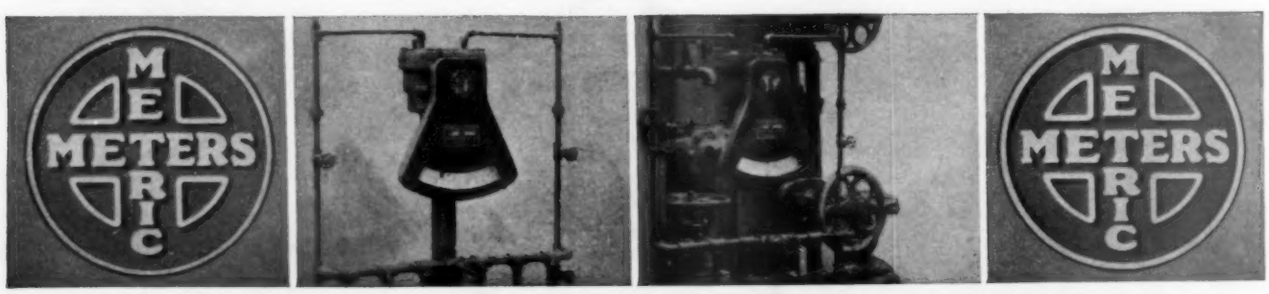
Special Metric orifice discs are provided so that the indications on the dial will indicate, without any calculations, the rate of flow, either with flange, or 2½ and 8 connections. Metric Indicating Flow Meters are therefore furnished according to specifications.

Important new applications for Flow Meters are being worked out constantly. Our advice and recommendations are always available without obligation. A survey of your plant may reveal many places where accurate flow registration will pay. Ask us for suggestions.

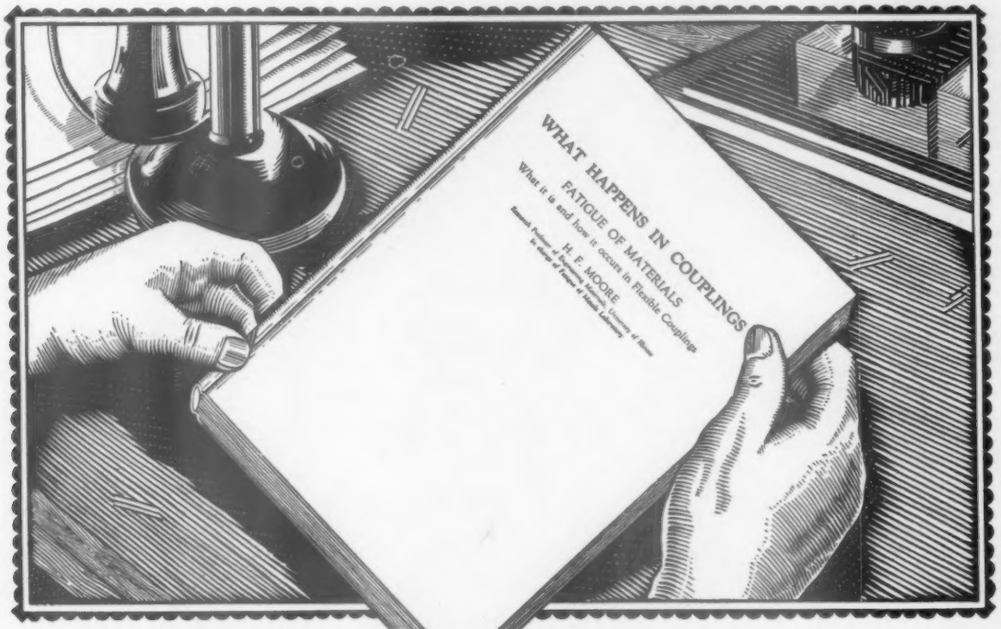
SALES SERVICE
WESTCOTT & GREIS, INC.
Dallas Tulsa Los Angeles

Metric Indicating Flow Meter

METRIC METAL WORKS
of the American Meter Company, Inc.
·ERIE·PENNSYLVANIA·U·S·A·



This Book costs you nothing and may save thousands in your plant!

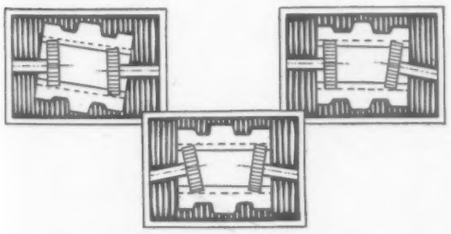


Shut-downs from coupling failure cost money and can be avoided

Since early days, old-type flexible couplings have depended on flexible materials (rubber, leather, fibre, spring-steel) to provide the "give" necessary to take up misalignment.

What makes this flexible material break down? Read this short book. It is by one of the outstanding authorities on Fatigue of Materials. See that the way to eliminate failure is to eliminate flexible materials—as done in Fast's Self-Aligning Coupling.

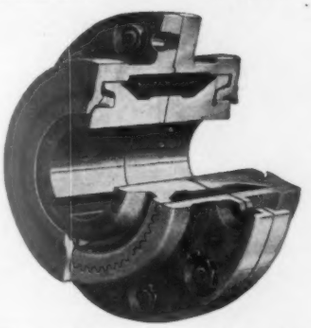
Learn why the Fast principle of mechanical flexibility entirely eliminates all chance of coupling failure, thus avoiding coupling shut-downs in your plant. See the interesting diagrams showing the evolution of coupling practice, and the way Fast met the problem.



Two spur gears, one on each shaft end, are completely and continuously meshed in oil with the internal gears of a floating sleeve. The shafts and sleeve revolve noiselessly as one unit, allowing free angular and lateral movement.

Use the coupon

Get this authoritative book. It's free. Learn how and why Fast's Flexible Coupling banishes coupling failures forever.



The coupling without flexible bushings, pins, springs, discs, grids or any other flexible materials

FAST'S
— SELF-ALIGNING —
COUPLING

THE BARTLETT HAYWARD COMPANY
217 Scott Street - - - - - BALTIMORE, MD.

Please send me the Free Book by Prof. Moore

Company .....
Individual .....
Address .....
City ..... *State* .....

Two rotary Tongs for 6" service

YOU have your choice of two WILSON ROTARY TONGS for 6" service. The regular 6" Rotary Tong and the new 6" Extra Heavy Rotary Tong recently designed to meet the severe conditions encountered in drilling wells to greater depths with the use of larger and more powerful drilling machinery. In both Tongs will be found all of the patented features of Wilson Tongs. Great strength in point of design and metal is achieved without sacrifice of simplicity in construction. Also the Wilson 10" Casing Tong can be bushed for 6" Rotary service.

Succeeding WILSON & WILLARD MFG. CO.

WILSON OIL TOOLS CORP.

OIL TOOLS DIVISION

of

Byron Jackson Pump Co.

2301 E. Vernon Ave., Los Angeles, California

Factory Representatives:

Tulsa, Okla., 214 East Brady St.
Houston, Texas, 2201 Breckenridge St.
Fort Worth, Texas, 814 Dan Waggoner Bldg.
New York, New York, 1245 Graybar Building

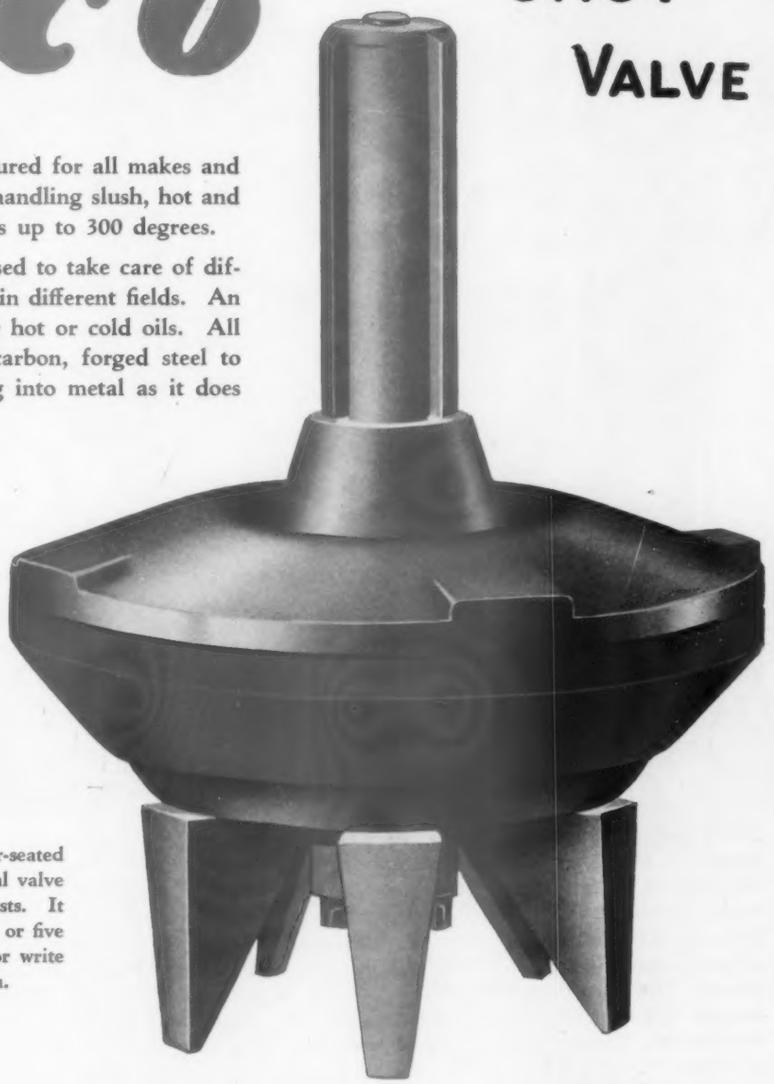
6 Rotary Tongs

first in safety, strength, power, ace

The SECO STRAIGHT SHOT VALVE

The SECO Valve is manufactured for all makes and sizes of pumps, particularly for handling slush, hot and cold water, gasoline, and hot oils up to 300 degrees.

Various kinds of inserts are used to take care of different drilling formations found in different fields. An especial composition is made for hot or cold oils. All other parts are made of high carbon, forged steel to prevent gritty fluids from eating into metal as it does with cast parts.



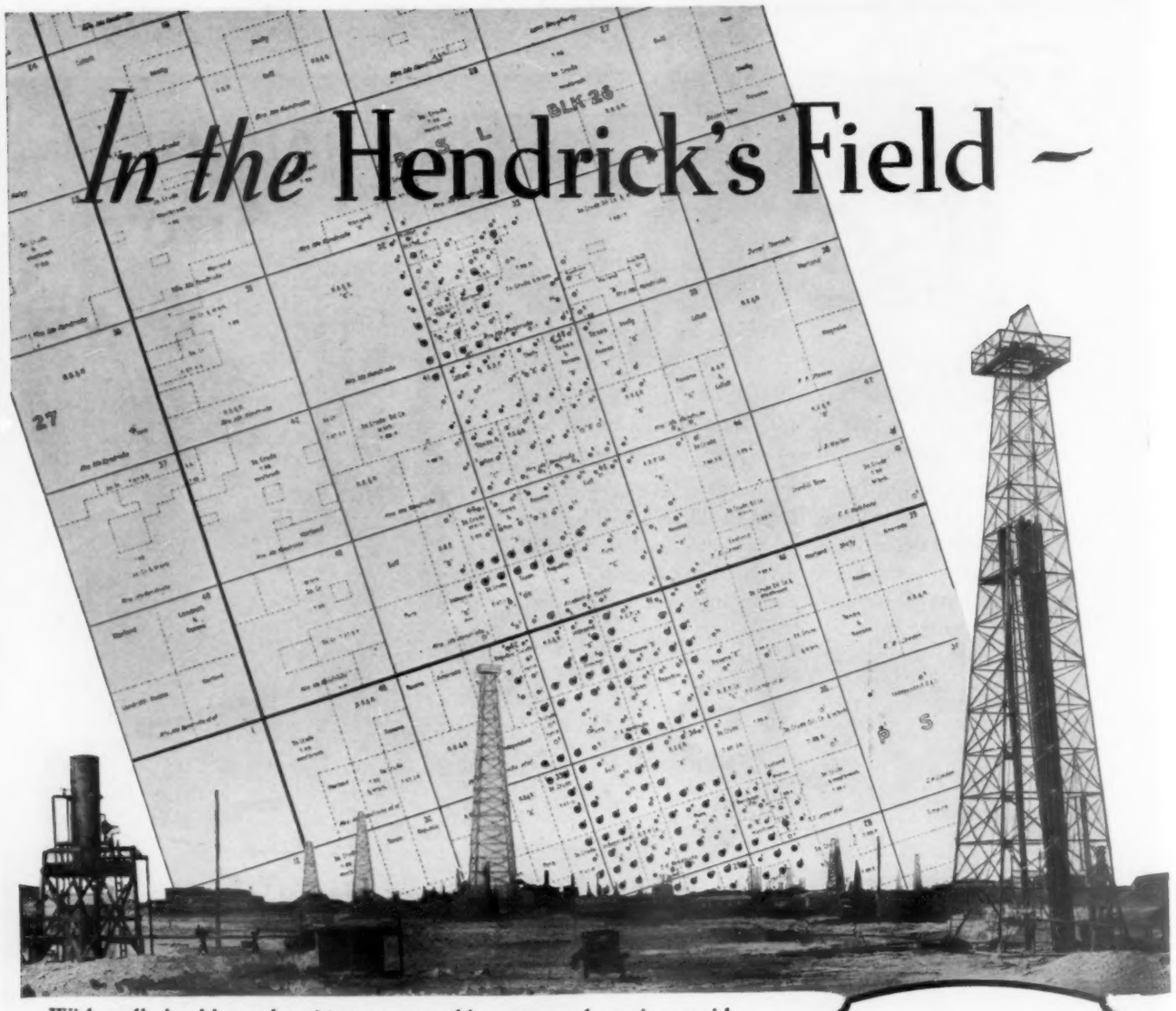
This new drop-forged steel taper-seated valve is by far the most economical valve on the market according to all tests. It will outlast the average valve four or five times. Call at your supply store or write us for detailed information.

MISSION

Sales Company, Inc.,

Esperson Bldg.

HOUSTON



In the Hendrick's Field ~

With wells in this pool making considerable water and causing rapid corrosion of the pipe, it becomes important to employ material which has proved by test and experience to afford greatest resistance to corrosive conditions.

It is for this reason that so many producers in this area have come to depend upon Byers Galvanized Tubing for maintenance of operations. The advantages of galvanized wrought iron lie, first in the known fact that zinc has greater resistance to corrosion than any ferrous metal. Second, the surface of wrought iron, being furrowed and uneven, affords a better anchorage for the zinc coating, resulting in a considerably thicker and better adhesion of the galvanizing. Third, the wrought iron itself is noted for its high immunity to corrosion, due chiefly to the protection afforded by the millions of silicate slag filaments.

Byers Galvanized Tubing shows a life considerably in excess of cheaper material and even though higher in initial cost, has shown a big saving in replacement and maintenance cost.

Bulletin No. 41, analyzing the advantages of galvanized wrought iron, is available on request. A copy will be sent without obligation.

A. M. BYERS COMPANY, *Established 1864,* Pittsburgh, Pa.
Branch Offices: Houston — Dallas — Los Angeles — San Antonio — Tulsa — Shreveport
Distributors: International Supply Co., Jarecki Mfg. Co., Oil Well Supply Co.

Field Report

"In a certain well in this area, 500 feet of Byers 2½" galvanized tubing was installed in 1924, having been used as a liner. In 1926, when washing the well, a string of wash pipe was used on the bottom and a quantity of cheaper tubing material, also 2½", was connected to the wash pipe and used above the galvanized liner as wash pipe.

"The well started to flow suddenly and it was necessary to leave the wash pipe in the hole. Two years later, 1928, all material was removed. The cheaper tubing material was completely eaten up while the 500 feet of Byers galvanized material proved to be in perfect condition with the exception of one length having a very small hole in it."

BYERS *Galvanized* TUBING

GENUINE WROUGHT IRON

THE
NATIONAL SUPPLY
COMPANIES

Say you saw it in The OIL WEEKLY

CLARK DOUBLE ACTING GAS ENGINE

"MONEY IN YOUR POCKET"

Seven Different Ways

Savings in Engine Cost Per H.P.

Savings in Freight and Hauling

Savings in Foundations

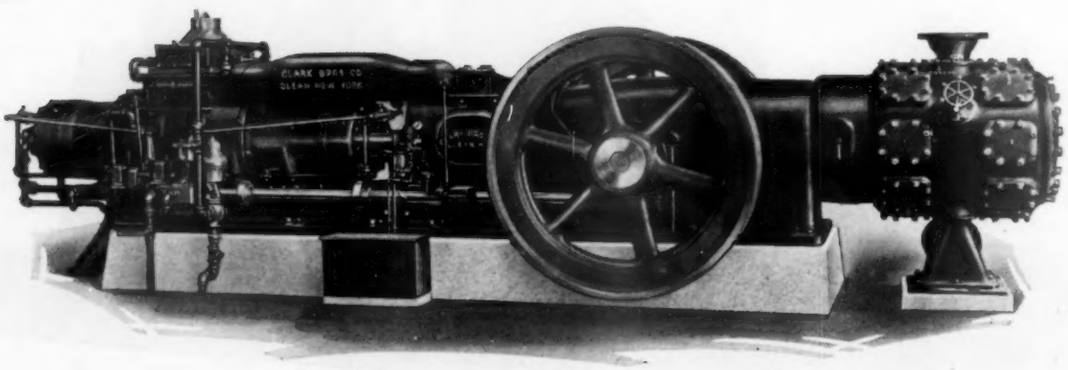
Savings in Building Costs

Savings in Piping Needed

"Super 2" Fuel Savings

2-Cycle Operating Savings

Ask for details on CLARK 200 H. P. and 400 H. P. Double Acting Engine. Clark Bros. Company, Olean, N. Y. Branches and Warehouses: 125 W. First St., Tulsa; MaCamey and Sweetwater, Texas; and Artesia, N. M. Smith, Booth, Usher Company, 228 S. Central Ave., Los Angeles, and 50 Fremont St., San Francisco.



CLARK

Say you saw it in The OIL WEEKLY

The Milled Groove

An Exclusive Feature of

THE LAYNE Screen

This is the way the milled groove opening looks. It is responsible for the latest improvement in screen design. The enlarged and graduated inflow surface for the fluid is self evident here. The strength of the screen is NOT weakened by this milled groove, as the depth of the groove is only sufficient to facilitate the flow of the fluid to and through the center hole.

Observe the maximum inlet area provided by the oblong grooved holes milled in the pipe. Notice that the fluid now has to flow but a short distance before passing through the screen.

These milled grooves do not weaken the screen body, either for tensile strength or collapsing strength.

Note that the grooves are so spaced that the drainage distance between the Keystone Wires with which every Layne screen is wrapped, is very short, eliminating the possibility of openings becoming clogged with mud or sand.

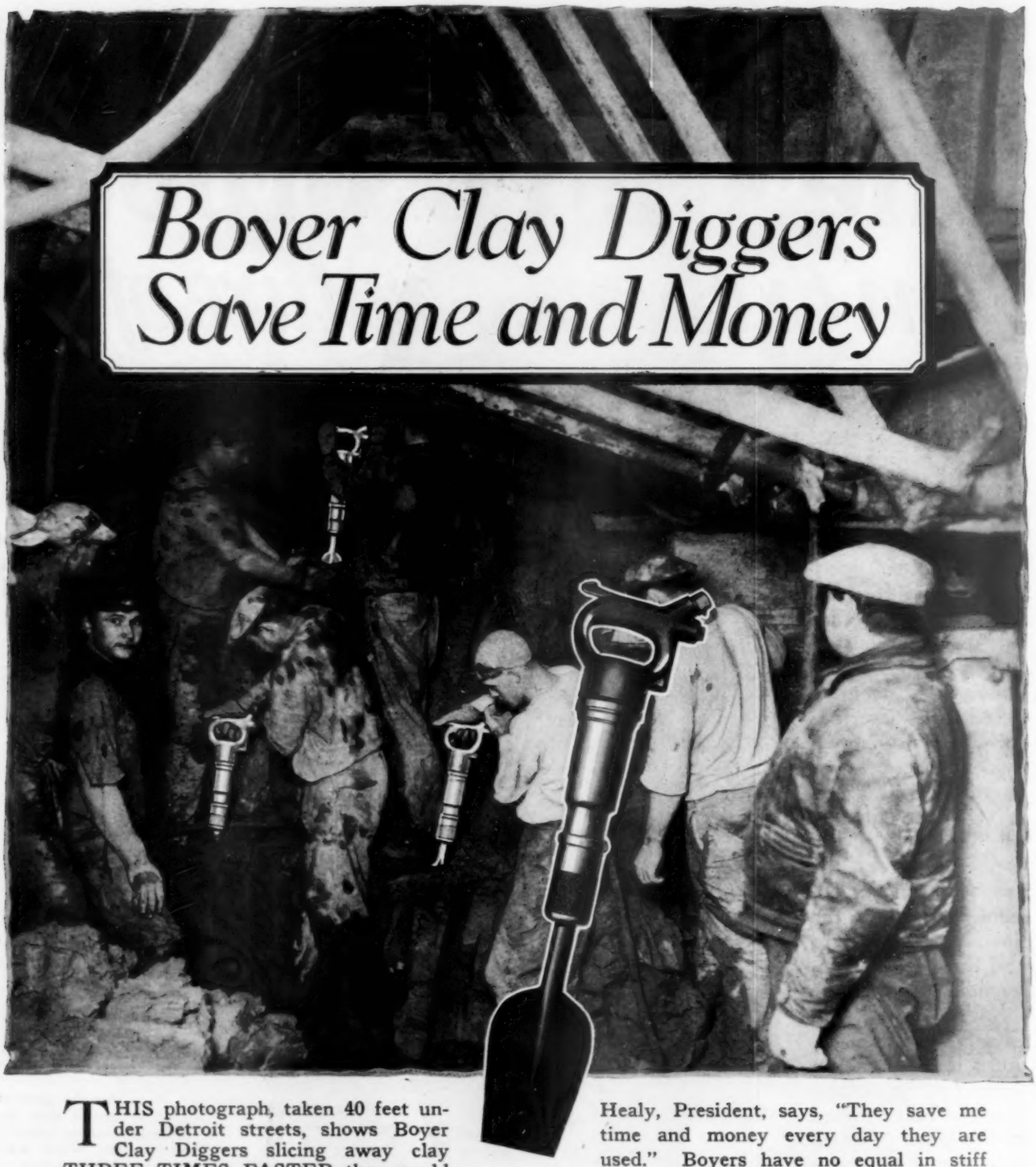
The Layne and Bowler Co.

Houston, Texas

The Layne New York Co.
30 Church St., New York

The Layne & Bowler Corp.
Los Angeles, Cal.

Vickers, Limited
London, England



Boyer Clay Diggers Save Time and Money

THIS photograph, taken 40 feet under Detroit streets, shows Boyer Clay Diggers slicing away clay THREE TIMES FASTER than could be done with hand picks. The S. A. Healy Company, the contractor on this Franklin Intercepter Sewer, has nearly 100 Boyer Clay Diggers because as Mr. Healy, President, says, "They save me time and money every day they are used." Boyers have no equal in stiff clay, hard sand or gravel. They weigh but 26 pounds complete and strike 3000 powerful blows per minute. If you're not using Boyers, you're losing money.

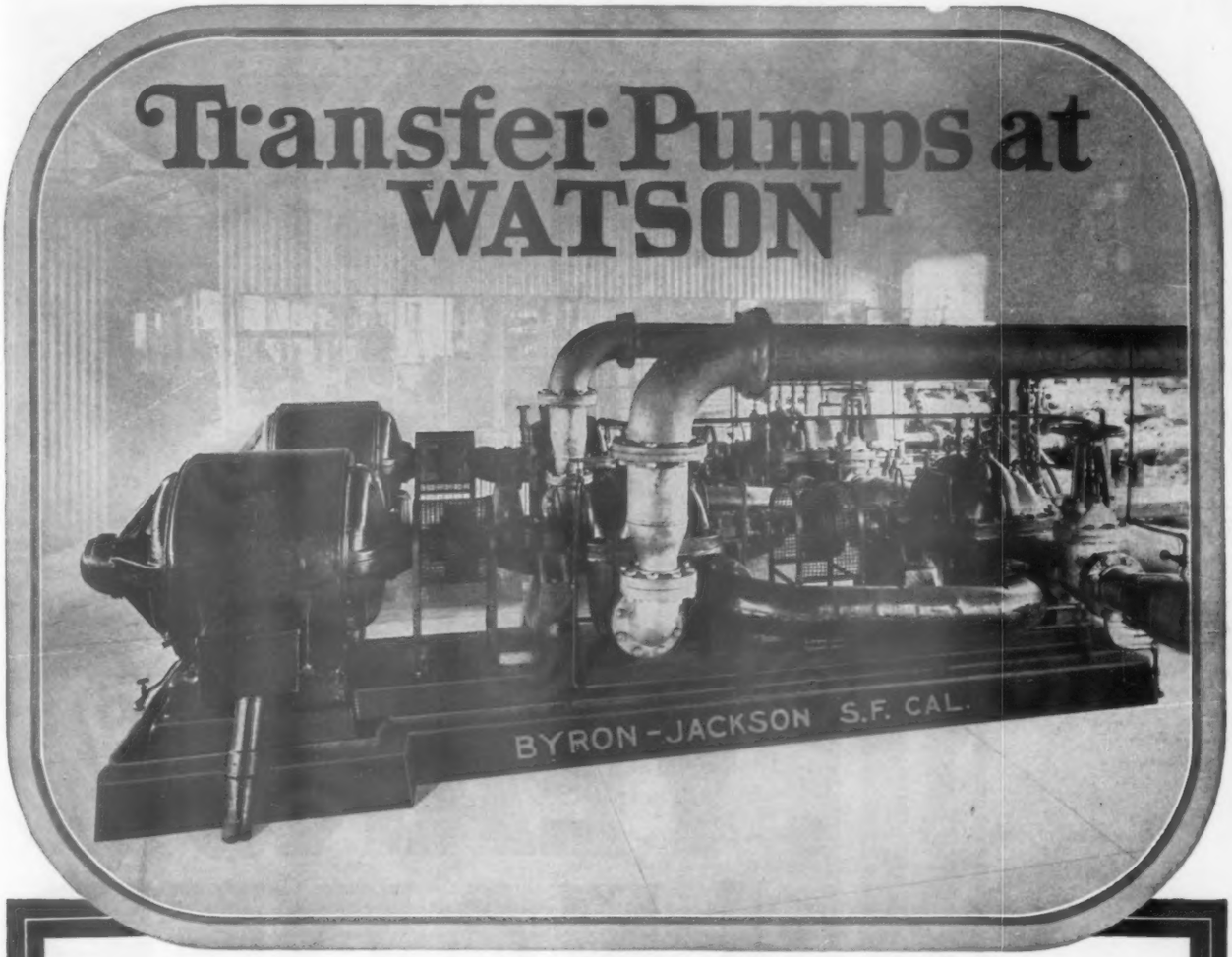
Illustrated and described in Catalog 561 sent on request.

Chicago Pneumatic Tool Company

Sales and Service Branches all over the World P-297

6 East 44th Street **New York, N. Y.**

Transfer Pumps at WATSON



Wherever pumping is done on a large scale, through oil pipe line pumps or in refineries, Byron Jackson Multiplex centrifugal pumps are the invariable preference. At Watson, Byron Jackson centrifugals are everywhere in evidence. This photograph shows them handling gasoline in the ten-mile line to Los Angeles Harbor. Byron Jackson Multiplex pumps are also employed on the 100-mile line from Ventura to Wilmington, the longest natural gasoline line in the world; also in many pipe lines and refineries in various domestic and foreign fields. In the growing dependence placed on Byron Jackson equipment the world over by petroleum engineers is seen the reward of this company's policy in designing durable pumps to meet the needs of the industry.

SINCE 1872

BYRON JACKSON PUMP CO.

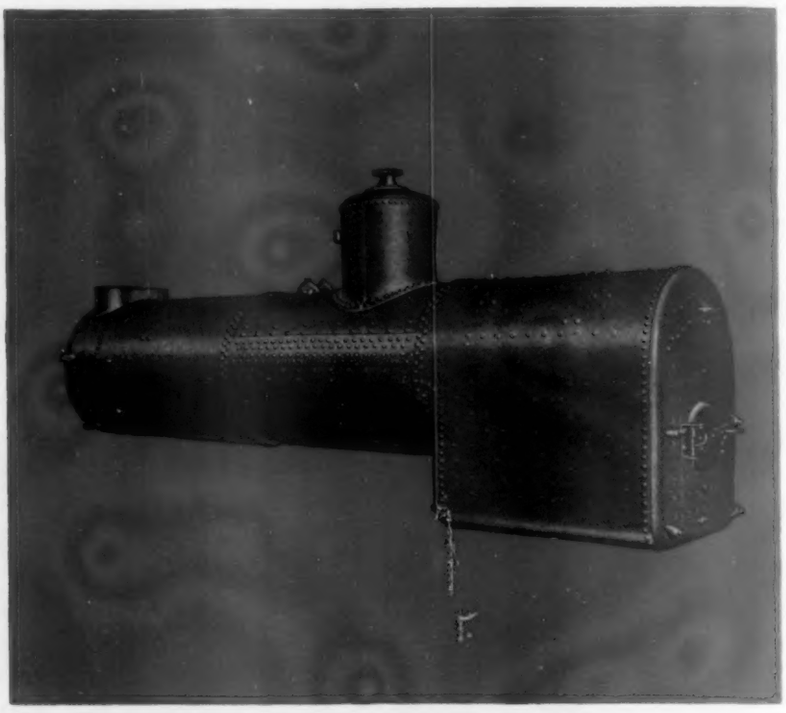
Factories: BERKELEY, Los Angeles, Visalia

Branches: San Francisco, Portland, Salt Lake. Dallas, Phoenix

BYRON JACKSON

CENTRIFUGAL PUMPS FOR EVERY SERVICE

FOR 30 YEARS *the* LEADER



YEAR after year, as drilling methods changed and more difficult drilling conditions were encountered, "Oilwell" Boilers were constantly improved. Today, in every oil field in the world, they are unequalled for steaming qualities and durability.

"Oilwell" Boilers are furnished for 150, 175, 200 and 250 pounds working pressure, with dome located either over the wagon top or over the barrel; also either mounted or unmounted.

914

OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Say you saw it in The OIL WEEKLY

FEB 18 1929 ©CIB 30194

Volume 52, No. 9 *February 15, 1929*

The OIL WEEKLY

A GULF PUBLISHING COMPANY PUBLICATION

TABLE OF CONTENTS, PAGE 35 ADVERTISERS' INDEX, LAST PAGE

Practice of setting strainers in loose sands for

Controlling High Pressures And Large Flows

By HARRY PENNINGTON
Mechanical Engineer

THE fact that over one hundred thousand wells have been equipped with strainer on the Gulf Coast and in California, and that several hundred millions of barrels of oil have been produced through the strainer, points to its value in controlling high pressure and large production of oil and gas from loose sands.

The method, or perhaps system would be a better term, for equipment and appliances are equally as important as procedure, was designed to meet severe conditions, to secure safety to life and property, for speed in handling in high pressure well work, and for providing a means of pulling and renewing strainer as many times as necessary during the life of a well, without re-drilling, or milling out through casing and setting another string.

Its development step by step may be of interest, not only on the Gulf Coast and in California, but outside of these districts, for the writer has noted that reversions are being made to former practices that have been discarded, and that outside of the Gulf Coast—in loose sand oil fields—the best Gulf Coast practices of today should finish wells somewhat better.

The first two Gulf Coast fields, Spindle Top and Sour Lake, produced the oil from the cap rock—salt dome cap rock—and wells were finished by simply setting casing down on the cap rock, a hard rock easily located, and then drilling into the porous rock containing oil; they came in without bailing. Quite simple well work, from today's point of view, but difficult and dangerous then on account of the high relative pressures found at such shallow depths—875 to 1050 feet.

There were a few stray sands found in these two fields above the cap rock, and in two or three cases, woven wire strainer was used for separating the oil successfully, but the quantity produced from upper loose sands was very small compared with cap rock production.

But when Batson's Prairie came in, during the winter of 1903, quite different conditions were found; the main oil was found in a very fine, loose sand, and oil could not, and cannot yet, be produced from fine sand without separating the oil from the sand down in the well, at the sand face, for, without separation, oil and gas under pressure always carry sand with it into the well bore and casing and sands the well.

Initially, at Batson Prairie, woven wire mesh strainer was tried, unsuccessfully, in the high pressure work at the beginning of the field; then round wire strainer came into use, followed by keystone wire strainer.

Then, as now, the width of opening to prevent sanding, was narrow, but the principle of allowing the finer sand and silt to pass through to clear the oil sand and make it more porous in a zone surrounding the strainer was fully demonstrated at Batson Prairie, and that principle is still dominantly the most important phase of strainer work.

Strainer with .005-inch opening or mesh between wires was totally unsuccessful; it mudded up so tightly that no oil whatever could pass through, but when pulled, and .012-inch mesh between wires run into the well, it responded invariably with large production.

Originally, in many cases at Batson Prairie, strainer wires were badly cut, but when the quantity of oil was sufficient, such wells produced large quantities of oil, along with much sand—perhaps more than if the strainer had held—but when production declined to such point as the volume of oil and gas would not carry the sand coming in, these wells sanded up. Perhaps this field had more gas than we find today, proportionate to oil, and strainer cutting was intensified by the large volumes of gas; certainly this gas was more heavily charged with hydrogen sulphide than any before or since, for it was of such large volume and so poisonous that six-, eight- or 10-inch gas lines from separators were required to carry the gas out of the field where it could be burned for safety.

The combination of large oil production, high pressure, large gas production and fine sand in this field was somewhat difficult to overcome, but after a short time the field reverted to strainer with every success.

The first method of setting strainer, used at Batson Prairie, is shown in Figure 1, which was an adaptation of the older method of eastern fields in setting liners. But the wells blew between the strainer pipe and casing, and sanded.

The full string was also tried, as shown in Figure 2, but even though flow between the strings at the surface was prevented by sealing between the top ends of the strings, as shown, after wash water had flowed down between the strings, and had passed through the strainer and been

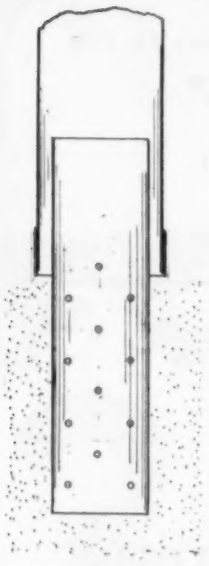


FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

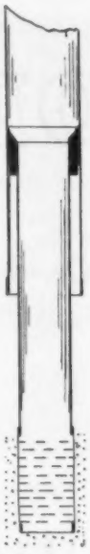


FIGURE 5

FIGURE 6

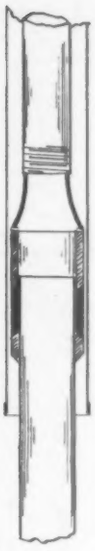


FIGURE 7

blown out of the well, pressure of gas and oil compressed in the space between strings, carrying sand upward between them, and the inner string could not be pulled. This is illustrated in Figure 3, where sand has been shot upward between strings a distance nearly to the surface, under which condition, the inner string and the strainer could not be pulled when necessary, if the strainer was cut or if the strainer was too fine.

To prevent this, the writer, who had assisted in developing the next method to be described while still in his teens, introduced the lead seal method into this field. This method is shown in Figure 4, showing the setting assembly, and Figure 5 shows strainer in place, and sealed. The setting tool consisted simply of a left hand thread at the bottom end of drill pipe, screwed into a mating left hand thread on the inside of strainer, with a wash pipe extending down to a wooden wash plug immediately above the back pressure valve. After washing, the strainer and well, the drill pipe was backed off, and removed from the well, then run again with a sealing iron, to expand the lead seal out against casing, to seal against the passage of oil, gas and sand between the casing and strainer.

The lead seal was made by casting a lead ring on to a steel ring, and then riveting the steel ring around the strainer as shown, with the upper end of lead ring projecting above the strainer pipe.

This method was successful at Batson Prairie; several hundred wells were finished with it successfully and many millions of barrels of oil produced. The lead seal may be milled out and the strainer withdrawn and another set, and in some cases, strainer was pulled without milling at all.

But when the Jennings field—Mamou—of Louisiana blew in, while Batson was still going good, the oil was found also in fine, loose sand, but the pressure relatively, was much higher, and the Batson Prairie method was not successful. When the drill pipe was backed off of the strainer to come out of the hole to run the common sealing iron, the wells followed the pipe out immediately the drill pipe was raised. The drill pipe acted like a swab when lifted and the wells immediately started to blow—and blow hard—and since a well can blow between strainer pipe and casing more easily than through strainer, as fast as wells were washed, the drill pipe backed off of the strainer and lifted, these wells blew in and sanded up. One of the Wilkins wells blew in thus with the drill pipe in the hole, hanging on the elevators, with the lower end of drill pipe just above the strainer; high velocity of gas and oil, charged with sand, promptly sandblasted the drill pipe collars off of the drill pipe and the well sanded and was lost.

Wells were too deep at Jennings—about 1700 feet—to blow the drill pipe out as at Sour Lake in the 875-foot cap rock wells and although many rigs were running at Jennings, no wells were completed for steady production with the Batson method and Batson type appliances.

The writer then devised a new method with appliances for setting and sealing without making a round trip with the drill pipe. In this method, the lead seal was turned upside down with a sliding fit on the strainer pipe, and a steel ring was cast integral with the lead, as shown in Figure 6. A tapered steel ring was riveted around the strainer pipe, so that when the steel-lead ring is pushed down over the tapered fixed ring, the latter swedged the lead out to seal between strainer pipe and casing.

Then, to seal, four leaf springs are shown inside of the drill pipe, extending below the same down into the strainer pipe and arranged that when the drill pipe is backed off and raised, the springs expanded outward to the casing, as shown in Figure 7, when by setting down, the springs pushed the lead seal down and the well was sealed, without a round trip.

Even though many of these wells blew in with the drill pipe partially in the hole, they did not sand up, but continued in steady production. The first well so set and sealed was owned by Bass & Benckenstein; this well produced several million barrels of oil and for many years, its record of total production exceeded that from any Gulf Coast well. Seven joints of strainer were set in this well to cover the entire oil sand.

Thus the seal and setting tool became known as the Jennings type; no patents were secured by the writer either on the method of the appliances for he withdrew from the field shortly afterward to return to college. Much better tools for setting and sealing are made today, of course, but the system is yet far from perfect in many ways.

Selection of Strainer

Insofar as principle of separation, there is little difference in any style of strainer or slotted pipe; all designs of wire wound, button and slotted pipe have a smooth exterior surface; in nearly all types the openings diverge inwardly for self cleaning; the same type of packer seal, back pressure valve and setting tool is used, and the method of setting either a full string above the strainer, or a short string, is the same, in every detail.

But there is a material difference in the total clear inlet area between wires or through slots of the various types, comparing strainer with the same gauge of opening. The coarser sands of California are screened with correspondingly coarse strainer, and there, the total area of opening per foot of length of strainer is several times greater than on the Gulf Coast. Therefore, strainer with a limited lineal length of opening, but with greater width of opening, presents considerably more clear inlet area, and for that reason, con-

sideration of this feature is not as important in California practice as it is on the Gulf Coast.

The openings required on the Gulf Coast are so fine that the maximum lineal length of opening is desirable, in order to produce large quantities of oil without cutting the strainer. It is obvious that a strainer with 150 lineal inches of opening is not as effective as one with 200 lineal inches per foot of length. Several types do not attain even the lower figure.

There are numerous types of strainer, each with some particular merit for some particular condition, but we must not forget that the purpose of strainer is to separate oil and gas from sand, and that if it were not necessary, we most assuredly would not use it.

The most important consideration is the percentage of free inlet area, or the total inlet area through the strainer for each foot of its length. The effective inlet area, as observed in many joints of strainer pulled from the well, is reduced by clogging with mud when the same is set in the well, and subsequently by corrosion.

It may not be conceded, but the fact remains, that only the openings through wires that are directly over the holes in pipe wound with wire, are effective, for it only this portion of openings that are found clear in pulled strainer.

In Gulf Coast practice, wire wound strainer is usually made on 4½-inch 16-pound casing, which has an outer diameter of 4¾-inch and an inner diameter of 4.08 inches. The outer diameter of the wire surface is 4.97-inches, making the circumference 15.81 inches. Ten wires per inch with four rows of solder, makes the lineal length of opening 128 inches per inch of length, and the average portion of that length directly over the holes is in the proportion of holes to total pipe surface.

The number of holes that may be drilled in the pipe per foot is limited by the collapsing strength of the pipe after it is drilled; too many holes weaken the pipe, although as many holes as possible should be used. The number of holes used in 4¾-inch O. D. pipe ranges from 42 to 80. With 60 holes per foot, the hole area is 11.78 square inches; the total surface of the pipe is 178 square inches per foot, and the proportion of hole area to total area is 6.6 per cent; therefore, the effective inlet area in strainer with 128 lineal inches opening per inch, or 1536 lineal inches per foot, is 6.6 per cent. of 1536, or 100 lineal inches. With a spacing width of ten-thousandths, the clear inlet area, then, per foot of strainer, is just one square inch.

But the sand face itself presents considerably more inlet area, as note from the following. While Gulf Coast sands are fine, still fineness within itself does not cause low porosity. The graduation of sand grain controls porosity; if the interstices between the larger grains are filled with smaller grains, and the interstices in the smaller are filled with still smaller, on down to the finest, the pore space is limited; the evenly graduated sand has the lowest porosity. But there is no natural sand that has an even graduation; there will always be found some sizes that predominate, and due to this, porosity of Gulf Coast loose sands is higher than the porosity of Mid-Continent consolidated sands, which accounts in part, for the higher recoveries per acre on the Gulf Coast.

In many tests for void, porosity has been found to range between 18 and 30 per cent., with 22 per cent. as an average. Hence, in a natural sand, the open area from the sand between grains, resting against strainer, is 22 per cent. of 178, or 39 square inches, so that the sand has a carrying capacity equal to 39 square inches of inlet area, per foot of length of hole.

But, when the oil must pass through the strainer, with only one square inch of inlet area, to pass through at the strainer face the velocity is increased 39 times as fast through the strainer as through the sand, if velocity is uniform and if all the strainer inlet area is open.

Naturally, although velocity is accelerated when passing through the strainer, as indicated by the sand blast cutting effect shown in many strainers used in higher pressure wells, it never reaches the value of 39 times the velocity through the sand.

It is now clear that since the sand inlet area is, in this case, 39 times the strainer inlet area, the maximum strainer inlet area is necessary and desirable, whatever kind of strainer is used, and that every means should be taken to secure the same with safety.

It is also clear that the strainer openings should be free of mud, sand, tar, cement, shale, corroded steel or bronze, or other material that might clog and close the same, for the clear inlet area is fixed by the size of sand grain, and not by any requirement as to the area of inlet necessary for low velocity.

Selection of Strainer Mesh

In the finer sands of the Gulf Coast, we deal with minuteness; but even though these sands are fine, they show greater porosity than consolidated sands. The sands reduce our calculations to fineness; necessarily, since we cannot alter the sands, we can alter the method, for it has proven extremely successful, using the same principles in coarser sands.

To proportion strainer to the oil said, water well practice was originally used and is now, still current. To proportion strainer, the sand should be first washed thoroughly with gasoline and then dried, followed by screening through successively coarser woven wire screens, beginning with .00-inch mesh and ending with such mesh as will pass the last grain. The proportionate parts invariably contain greater quantities of some particular range than others, a typical mechanical analysis being as follows:

Width opening	Percentage through
.001-inch	1½
.002-inch	2
.003-inch	2
.004-inch	3
.005-inch	3
.006-inch	2
.007-inch	3
.008-inch	3
.009-inch	4
.010-inch	3
.011-inch	8
.012-inch	11
.013-inch	16
.014-inch	20
.015-inch	12
.016-inch	3
Residue, tar balls	3½

This sand shows that 34½ per cent. of its weight will pass through .011-inch mesh strainer, and if strainer is made with a tolerance of .001-inch either way in spacing, .011-inch strainer may be used without fear that the well will sand, for .011-inch mesh will not permit the body of sand to pass through.

However, wire wound strainer is not made with as low tolerance as .001-inch, and to prevent the body of sand from passing through, the maximum width of strainer opening must be fitted to the sand. With a tolerance of .004-inch either way, in which the maximum width of opening in .010-inch strainer is .014-inch, then .010-inch may be used. Only a small proportion of strainer will have openings as wide as .014-inch, though, hence the quantity of sand up to .014-inch size that will pass through is limited.

Since this particular sand has sizes above .014-inch, it follows that even though the wider spaces will pass additional sand, the whole body of sand cannot pass through.

When a well is thus finished, intentionally passing sand, the sand gradually ceases coming, and gives no further trouble. If sand does not cease, cut strainer may be passing the whole body of sand, which may be detected by careful mechanical analysis with screens, and a new strainer may be required.

This method sets up the condition shown in Figure 8, which is representative of an above-ground duplication of what we wish to do below-ground. This representation was made by the writer to learn something of strainer, but unfortunately no pictures are available at this time, and drawings are used here.

The finer particles are shown to have been removed from a zone surrounding the well, by allowing them to pass through the strainer and out of the well, so as to increase porosity and secure a free flow through the sand toward the well.

After this condition has been realized,

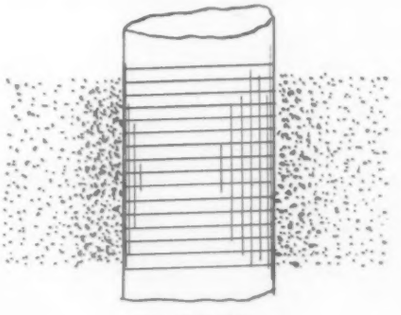


FIGURE 8

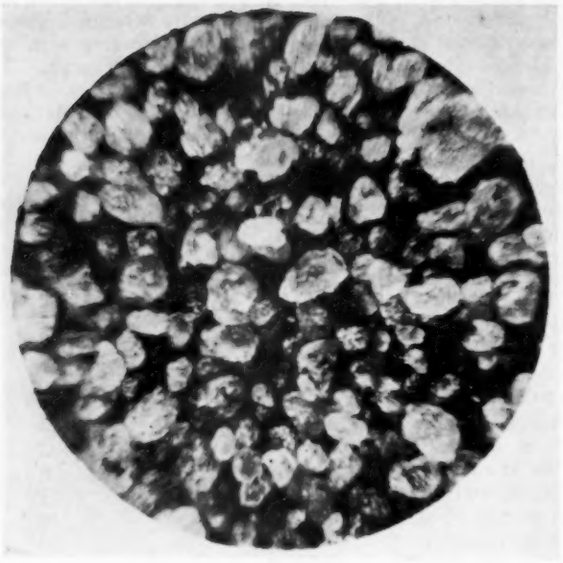


FIGURE 9
Gulf Coast oil sand with silt removed

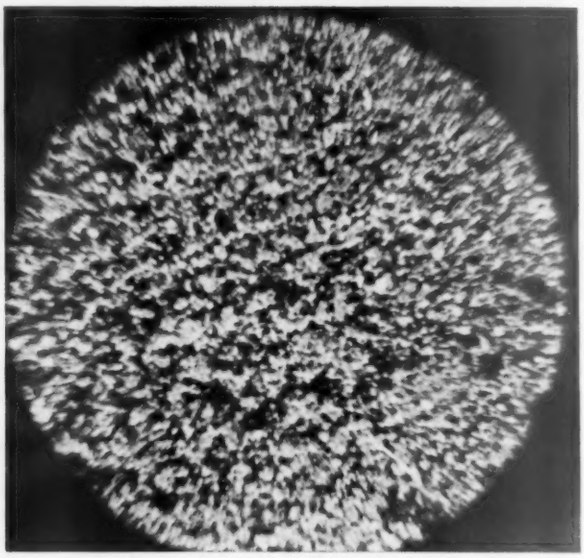


FIGURE 10
Silt cut of Gulf Coast oil sand

if the strainer could be removed from the well and production still secured, its purpose will have been realized, and the dangers of strainer corrosion eliminated. We have not gotten that far as yet, however, but some advantages of this method may be secured when strainer is re-set as will be noted in this article.

A Gulf Coast sand saturated with heavy oil appears fairly coarse, but upon washing in gasoline and drying thoroughly, its appearance alters greatly, making it appear like fine, wind-blown sand—typical desert sand.

On this account, the eye should not be depended upon for judging an unwashed sand; washing and screening is still the only accurate method devised for estimating the qualities of such sands.

A typical selective separation is shown in Figures 9 and 10. The finer sand shown, produced from the well, without question passed through the pore spaces of the coarser sand shown, for both of them came out of the same well, from the same sand. It is evident from these that selective separation down in the well can be obtained, and that the porosity and the free flowing qualities may be materially improved as shown in these two magnified pictures.

If the finer sand were still in the coarser, between the grains of the coarser, the sand could not possibly possess as free flowing qualities.

The argument against selective screening of sand and allowing a part of it to pass through, as against the method in which no sand at all is allowed to pass, is that of working barrel pumping difficulties, for we have not as yet been able to pump sandy oil with working barrels successfully.

This argument is valid if the well does not produce sufficient oil to flush sand out while flowing, but air lift handles sand as no other method will, and the use of air for pumping is beneficial to production, even if for no other reason than clearing the well of sand.

The method of proportioning strainer just outlined has been entirely successful in water well work, but to secure successful jobs, some work is necessary after strainer is set. Usually, in oil wells, nothing is done toward opening the strainer meshes, or toward making sand come in, on account of pressure and flow, but when pressure has subsided, somewhat, swabbing, agitation, blowing and bailing out sand so brought into the well will add to production without fail, not only by cleaning the oil sand surrounding the strainer, but also by opening up mudded strainer.

On account of the higher pressures found in wells today—the deep wells—strainer cutting is prevalent; in one field no successful strainer job has yet been secured, and every well has blown in and sanded up on account of cutting.

The practice of opening up a well immediately after setting strainer, to allow it to clean itself, will invariably cut the strainer in high pressure wells. One reason for opening wide is to secure sufficient velocity to flush sand and mud out, but some wells are opened to place well pressure against the strainer so as to clean the strainer, but this is not necessary if strainer is set correctly.

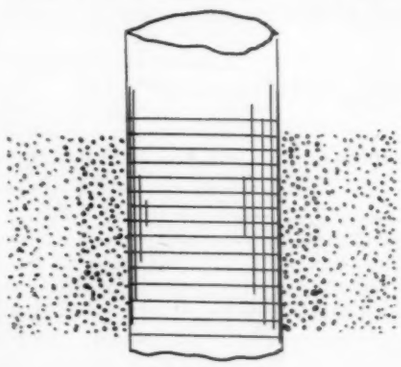


FIGURE 11

If a portion of the strainer is open to flow, which is usually the case, opening the well to full flow sets up high velocity through the open spaces, which can but cut them wider; it is highly problematical that material additions to open strainer spacing is secured by opening wells up, even for a few minutes.

In high pressure wells, making considerable gas, flowing through tubing, adds to velocity in the flow line with a given production, and such velocity will flush sand out.

In using the term "high pressure," the volume of gas must not be confused with "pressure," for a well that will flow a small quantity of oil from a depth of say 3500 feet, may have its rock pressure withing a few pounds of another well that makes considerable gas together with oil from the same depth.

In many cases, working barrels cannot be let down into the strainer, or near the strainer, because of sand in the strainer pipe; the working barrel is placed considerably above the strainer to allow sand to settle back, out of the oil. If the strainer is correctly proportioned, and not cut, in this type of well, sand may be cleared by air lift and further trouble eliminated.

In another above-ground reproduction of well conditions, strainer with too fine mesh, used to prevent any quantity of sand at all from passing through, arrests the finer particles that have been driven through the sand along with oil to the strainer face. Figure 11 illustrates this

(Continued on page 68)

Conserving Gas *Use of Miller Method* *in* Texas Panhandle

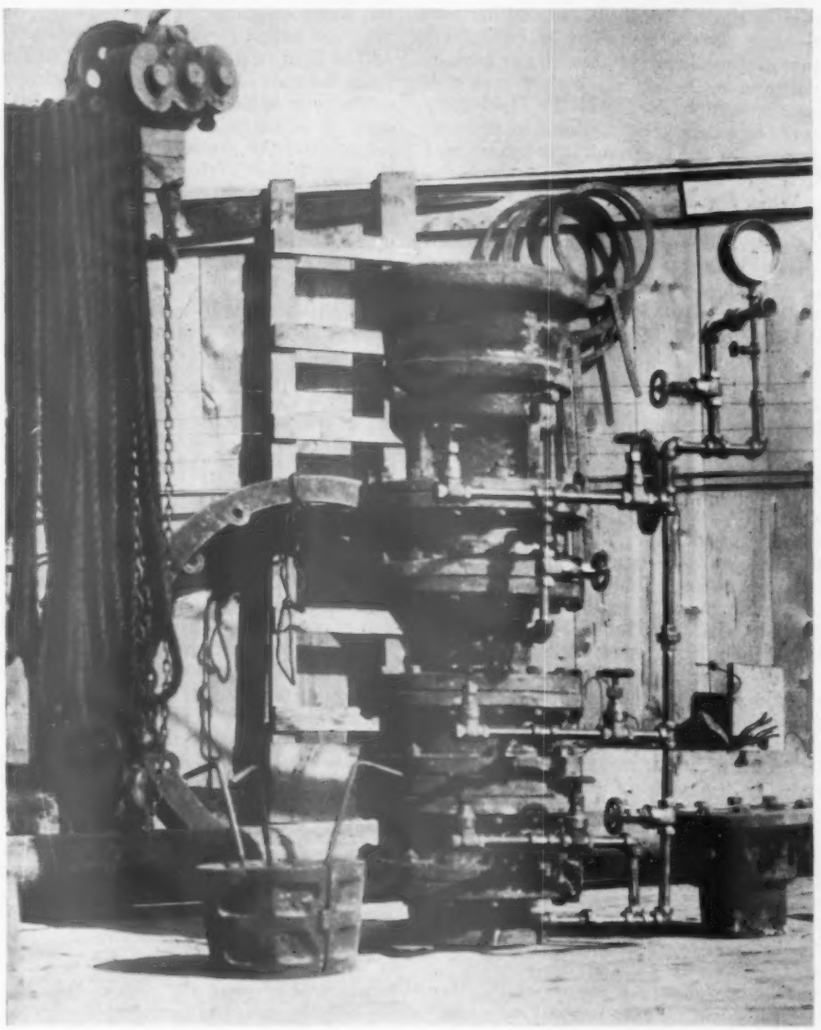
By GEORGE REID
Staff Representative

THE Oil & Gas Division of the Texas Railroad Commission ruled in October, 1928, as follows: "In all wells in the Panhandle oil producing fields of Texas where gas is encountered above the oil pay formation in volume of five million cubic feet or more, such gas shall be kept shut in and under control during drilling and until casing is set and cemented above the oil pay formation. Such control shall be established and maintained by the use of the Miller head, or any device similarly adapted to the purpose. This rule shall be effective on and after October 1, 1928."

In its effort to reduce the waste of natural gas that statistics reveal to have been lost in drilling wells in the Panhandle, the commission dared beyond a natural reticence in recommending the use of a particular patent when it specifically named what is commonly known as the "Miller Head" for drilling through gas formations.

Some authorities estimate that 4.3 per cent. of the recoverable gas from the Panhandle structure has been wasted at drilling wells. In round figures this loss is given as 491 billion cubic feet, out of 11,535 billion cubic feet recoverable. Large losses occurred at average wells, but the greatest losses have been at the abnormally prolific wells which were drilled under greatest difficulties. In drilling the gas pays in some of the latter type it has often been impossible to get the hole down to the oil bearing zone. Fishing jobs, the inability to run tools in the gas flow after failures to kill the gas, often resulted in enormous gas losses.

Panhandle operators who have experienced great difficulty in controlling gas flow during the past two years in this region were to a large extent responsible for the adoption of the ruling by the commission which made the use of the Miller balance method of control mandatory in the territory. These operators voted practically unanimously in favor of the order. Prior to the publication and adoption of the ruling, many of the operators had been using the balance method because of its positive control of the gas pressure and volume flow, and the resultant reduction of hazard to life and property.



Control head employed in the Panhandle producing fields for control of natural gas where the N. O. Miller-Regan balance control method is used to prevent waste of gas and to eliminate hazard to life and property. The system of small lines and valves are used to expand the three rubber bowls which seal the inner string of casing off.

The Miller Method

The Miller method was conceived and patented by N. O. Miller, former petroleum engineer for the Marland Oil Company, and consists of the use of a balance system of drilling through a gas formation. The design of the Miller apparatus, which is more properly termed the Miller-Regan gas controller or drilling head, is covered by patents held by Trout and Butler, who for some time have had a one rubber gas diverter or casing oil saver which is manufactured by the Regan Forge and Engineering Company. Mr. Miller arranged for his controller to be built by that company under protection of the patents claimed by Trout and Butler.

Prior to the development of the Miller

method, about the only practical process for drilling through the big gas pays was to carry a necessarily dry hole through the gas while the cuttings were removed by the gas flow, and in the event of the gas flow becoming too heavy, to get water to the bottom of the hole when it was needed, and pipe was run and carried to the final casing point. The hazards of drilling under such conditions are obvious. Other methods consisted of drilling with the aid of gas locks and circulating heads, but taken as a whole such practices were classed by the operators unsatisfactory in this prolific gas territory. One of the earliest attempted remedies was drilling through the big gas pays in a hole loaded with either mud or water. Usually this method was unsuccessful and always inefficient and harmful because of the fact that when drilling two or four hundred feet of gas pays of uniform, or nearly so, rock pressure, it was impossible to adjust the fluid pressures to balance the gas head in the lower parts of the hole and at the same time have the upper gases under control.

When the drill hole was overloaded so as to have the upper gases balanced, the excessive pressures on the lower gases almost invariably resulted in formation of fluid losses which could not be controlled. It is also unusual in cable tool drilling in the Texas Panhandle, to be able to carry a loaded hole and not encounter difficulty with the anhydrous formations. These formation materials produce caves which give serious trouble, and also in their reactions with water the more firm strata often swell out and reduce the size of the hole to such small dimensions that pipe can not pass. Cementing of the caves that were formed in the process of drilling with a wet hole has been attempted, but the cement would not set in the mud. Drilling the big gas pays in the Panhandle region with a loaded hole has been condemned.

The Miller process is essentially a method of drilling through and below a gas producing formation by balancing the gas pressure with an hydrostatic column by means of an arrangement embodying a specially designed bradenhead which permits carrying the pipe with the tools.

The well is drilled to the first gas bearing stratum and into the gas formation far enough so that there is sufficient volume of gas and gas pressure to start the balance system. The lower one-half of the regular Regan bradenhead is set up on the last pipe set and the next string of pipe is run to the bottom of the hole and set down. The assembled controller is made up on the bradenhead section which is in place. With the pipe on bottom and the gas on its exterior, the bradenhead flow is shut in by setting the controller rubbers against the pipe by operating the manifold pressure adjustments.

Stop-cocking or a plug is used to kill the gas in the interior of the pipe. In the stop cocking method the approximate gallonage of water that is calculated to overcome the gas pressure is pumped in, and the well head is open until the gas starts bringing considerable water. The well head is closed and more water pumped in, and this procedure is repeated until the well refuses to blow when opened at the head. Stop-cocking the water into the hole has several advantages, for by so doing no more water is put into the well than is required to balance the gas pressure. Also, there is no means of calculating how much water is needed to fill the inside pipe up to the necessary hydrostatic head, for very porous and sometimes creviced conditions are often found. This is especially true of wells which have been permitted to blow open for some time prior to the installation of the controller.

When a "friction" plug is used to kill the gas, the well is shut in and the plug lubricated into the hole ahead of the water. At the point where the weight of the water balances the gas pressure, the observed gauge pressure at the well head will be seen to drop to a vacuum. At this point the well should be opened quickly.

The term balancing is employed to indicate an equalization between the water column and the pressure of the gas when there is 20 to 30 feet of water on the outside of the interior pipe—at the bottom. This water on the exterior of the inner pipe acts as a seal and is essential to the working of the method.

When the gas flow is killed and a little additional water added, the pipe is swung several feet off bottom and hung in the slips which fit into the bowl for that purpose provided at the top of the controller. Throughout the drilling work with the Miller method, it is preferable that the pipe swing a few feet above the shoulder to give sufficient clearance for the underreamer to function.

After drilling starts, the pressure on the controller is under constant observation by the driller by means of a pressure guage placed on the dirrick floor near the driller's station. When a balanced condition is maintained a gas "smoke" or small flow will come from the well and the pressure registered on the controller should fluctuate with the motion of the tools. The water actually takes motion with the tools, rather than against them, and the rocking effect produced in this manner may produce as much as 12 pounds variation in the controller pressure.

In the office of Miller & Fisher at Amarillo is a glass miniature working model of the balance method, which duplicates the balanced condition in the drilling well. In maintaining the balance it is necessary to keep enough water in the hole to maintain a seal between the casing shoe and the outside gas. Gas pressure is exerted downward against the water seal, as it fills the annular space between the inside string or pipe and the larger outside string, and is sealed at the top by means of the Regan controller. Only sufficient water is held in the inside string to offset the rock pressure of the gas. It is necessary to add a barrel or two of water from time to time as is indicated by the action of the tools. This addition of water is for the purpose of taking care of formation losses and new hole.

An example in drilling with the method is reported as follows: Ten-inch casing was run on top of the lime and 8¼-inch casing on top of the gas. The Regan bradenhead was installed and the inner casing string was filled with from 1000 to 1100 feet with water which would just balance the pressure of the gas between the two casing strings. Drilling was carried on through this 1000 feet of water with the hole under reamed and the casing lowered about every 30 or 50 feet. The length of the tools being 63 feet, care was taken that the top of the tools were not allowed to get below the pipe. The hole was drilled through the gas formation at the rate of 20 to 30 feet per day and the pipe under reamed and carried.

The Miller-Regan head has three rubber bowls which are capable of withstanding greater pressures than have ever been found in the Panhandle region. They are designed so that they fit closely around the pipe that is being carried and are so arranged that the gas from the space between the two casings can be admitted inside of the rubber bowls to expand them in against the inner casing to form a non-leaking ffexible inclosure, allowing the inner casing to be moved freely either up or down the hole with no escape of gas. In passing the collars through the head, an arrangement is provided consisting of a series of valves, so that one bowl will hold the gas pressure in between the two casings while the other bowls are relieved and the collars pass through them.

The gas pressure is uniform in the Panhandle territory and averages from 400 to 430 pounds per square inch. Approximately 1000 feet of water will effectively balance this pressure. Water pumped into the inner string does not extend upward on the outside of the shoe of the casing over 30 to 40 feet and the walls of the hole are kept dry by the gas, except that part which is around the shoe of the casing. This tends to eliminate the caving of walls when drilling through breaks, and maintains the casing free at all times.

When the head is placed ready for operation, all of the gas control valves are closed. By opening two of the valves the gas pressure from the space between the outside string and the inner string is diverted to the lower rubber and it is expanded against the pipe to shut off the escape of gas at this point. Then, in turn, the remaining valves are opened which place the upper two rubber bowls in service. These are the working seals. The lower rubber seal is the emergency bowl and is taken out of service by closing the valves which controls it.

When it is desired to run another joint of pipe, the pressure is relieved from the collar chamber and the upper rubber. The pipe is lowered so that the collar stops in the collar chamber. This is done without difficulty by marking joint permanently, at a distance above its lower end that is equivalent to the distance between the collar chamber and the derrick floor. With the collar in this position, the pressure is applied on the top rubber and the chamber, then the middle rubber is relieved of pressure and the collar passed through the head. When the collar is clear, the middle rubber is placed back in service. The work is done quite easily and with speed, since control of the rubbers is se-

cured by merely opening and closing the small valves.

In pulling pipe the above procedure is reversed. With the upper rubber in service the lower ones and the chamber are relieved. The collar is pulled up into position below the upper rubber by stopping the mark, which was previously made, at the derrick floor. The pressure is applied on the middle rubber and the upper one is relieved, permitting the collar to pass out of the head. Only two men are required in these steps.

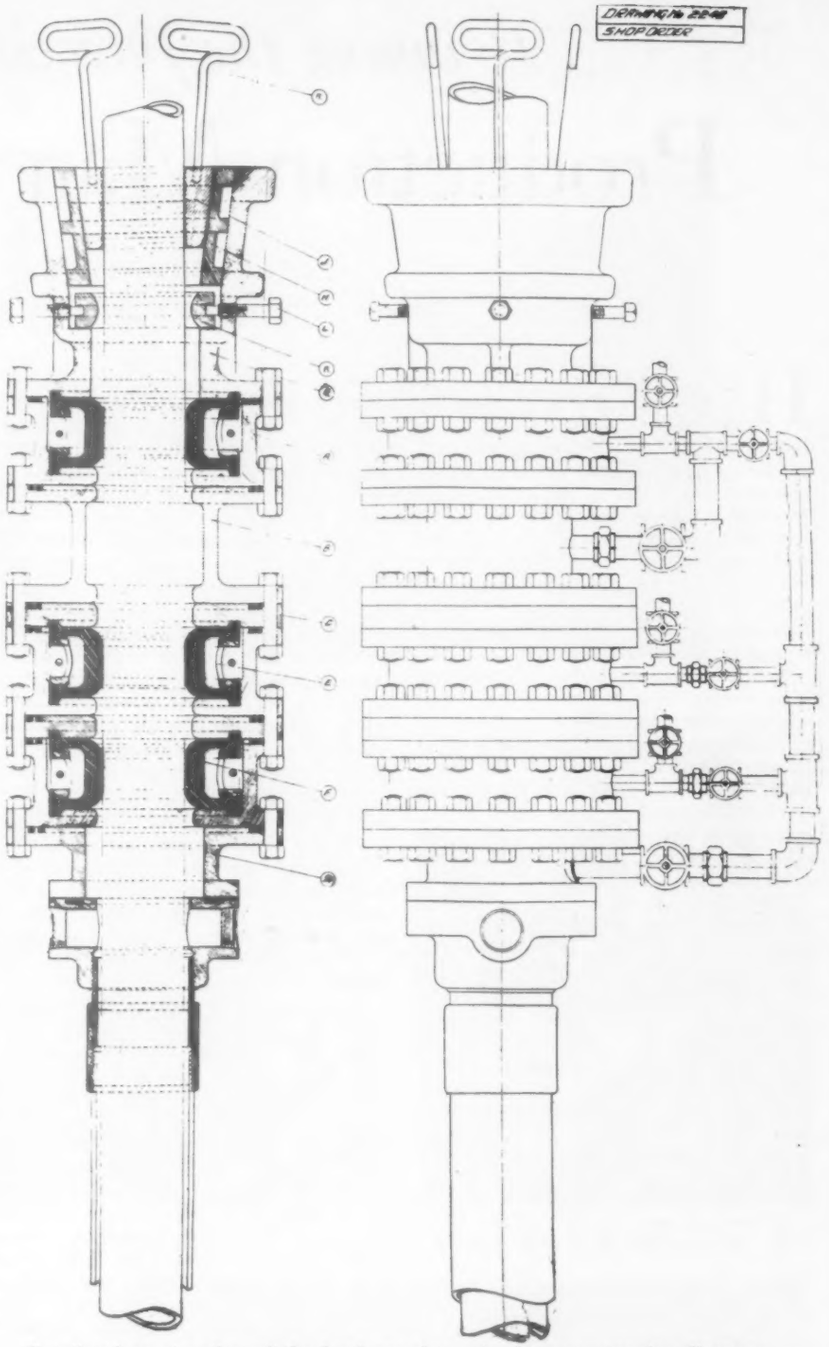
The slip bowl above the top rubber is kept filled with water, as the water acts as a lubricator in the passage of pipe through the rubbers. To prolong the life of the rubber bowls, each collar should be inspected for ragged edges and filed smooth if any irregular surfaces appear. Ordinarily the life of the rubbers is long. When one is ruined, however, the complete procedure of changing a rubber requires less than one and one half hours for two men. As an example it is assumed that the middle rubber must be replaced. First the pipe is set down on the shoulder, (about five feet) and the emergency rubber is set. Then the flange below the damaged rubber is unbolted. Alternate bolts in this flange do not have nuts but screw into the tapped and threaded keeper ring between the two flanges. When the flanges have been parted and loosened portion of the head is stripped over the casing, and the new rubber installed. The head is re-assembled by stabbing it over the casing and back into place.

In the Panhandle districts where it is necessary to drill through the "big" gas in order to get to the oil, the average drilling hazard is necessarily an influence in the contracted drilling rate. Companies were required to "carry" the contractor through the big gas in many instances. The usual difficulties occuring in such a heavy gas flow consists of such items as inability to get tools down the hole; bad fishing jobs due to the presence of the gas, which is often poisonous. After the first gas stratum has been drilled it is often impossible to get water to the bottom of the hole. Often it is necessary to carry pipe and underream through the gas strata. Another difficulty is found in killing the gas, which is usually a last resort.

It is also usually impossible to get a formation shut-off in or near the gas zones on account of the hole having been blown out by the gas flow. It is also expensive and hazardous to run pipe in a heavy gas flow. These drilling hazards and others as well are eliminated by the Miller method.

The method also eliminates to a large extent, the personal hazard, and makes drilling work much safer in this region. Formerly it was necessary to employ two complete drilling crews. Over a score of lives were lost in this region in accidents that were caused by gas only. In addition to the fatalities, many thousands of dollars have been lost by minor injuries such as "gas eyes," etc. Probably the most important advantage of the balance control system lies in its safety feature since it tends to eliminate the fire hazard to both men and property.

It is said that drilling time can be as fast or faster than by the dry drilling method when passing through the gas formation and allowing the gas to flow uncontrolled. The waste concurrent with the dry method is entirely eliminated. The method also conserves the gas for future use in pushing the oil into the hole, or it can be removed through the bradenhead and employed for any purposes.



Details of construction of the head are shown in the accompanying diagram:

M—Permanent bradenhead section which remains on the completed well, and is bolted to the controller.

F—Heavy solid rubber ring designed to hold back the gas flow by applying the pressure of the gas on the "U" portion of the rubber, the seal being created by contact between the rubber and the casing. As shown in the cut, there are three such rubbers, the lower one being for emergency use, while the upper two are employed in the routine drilling procedure.

E—Spacing ring for holding the rubbers in position.

C—Machined face flanges with two rows of hydraulic packing.

B—Collar chamber.

K—Guide rings for keeping the pipe plumb. This device is employed to afford protection for the rubbers and to eliminate uneven strains and gas leaks.

L—Adjusting screws for guide rings.

H-J-K—Slips and bowl at top of head.

Winning the Interest of the
Production Man in Safety

By C. L. HIGHTOWER
Safety Director Texas-Pacific Coal & Oil Co.

HOW can I prevent accidents? Is it my fault that the roustabout does not wear his safety belt and is injured? What can I do to stop such careless practices? These are some of the questions that arise in the mind of the foreman, superintendent or executive who has suddenly been brought face to face with a serious accident or whose accumulative accident record over a period of years has brought on an excessive premium rate. To these questions there is but one answer—education.

Accidents are one form of inefficiency. If a pumper "forgets" to "switch" tanks when one becomes filled and runs 50 barrels of oil on the ground we unhesitatingly, and rightfully so, conclude that he is inefficient and dispense with his services or follow some less drastic disciplinary measure. If that same pumper forgets and takes an open light around a tank battery or does some other equally as foolish "stunt" which results in injury to himself or others, costing 50 or 500 dollars, we are, generally speaking, likely to dismiss the incident with a "Well, it's too bad Bill was hurt. I guess we will have to get another man in his place for a few days." We are too prone to accept the accident as inevitable and therefore fail to analyze the conditions responsible for it and see that inefficiency is the underlying cause. It is because we have gone along from day to day and year to year with this attitude towards accidents and the reason for their occurrence that the employer and the individual worker is today burdened, directly or indirectly, with high insurance costs.

The company whose accident frequency is exceedingly high over a period of several years, evidences a laxity in managerial policies or procedures.

Careless Man Not Needed

As it applies to the superintendent or foreman, it means that the right kind or a sufficient amount of supervision is lacking.

To the individual it means that his job training is not complete. A workman who "turns out" a quantity of work, the quality of which is good, but, who is, continually having accidents, is unquestionably not a desirable employee. An illustration of this point comes to mind. A large eastern refinery had in its employ a workman, skilled and proficient, who produced the desired quantity and quality of work but whose record for accidents was bad. The plant superintendent was interviewed and the exceedingly high accident record of this individual brought to attention. The plant superintendent dismissed the suggestion of the safety department to take some disciplinary action in the case with the statement, "The man is a very good workman and we cannot get along without him."

Several months later this individual suffered an accident, through his own carelessness, that resulted in total incapacity. And today the worker who was too valuable to be reprimanded for his carelessness is permanently disabled and incapable of earning a livelihood for himself and family, while the company who could not get along without him is going ahead just the same. The workman must realize that safety training is necessary to the same extent as trade learning in order to properly fit him for his chosen occupation.

We see then that the first step in our educational program to prevent accidents is the development of an appreciation that accidents are an evidence of inefficiency and not only can but must be prevented if we are to compete in industry as individuals or as an organization.

While overhauling an engine, which was used as power for a beam pumped well, a roustabout sustained several contused and one fractured finger. The clutch shaft flange had broken and it was necessary to put on a new flange. This required taking the clutch apart. The clutch pulley had been placed back on and the man injured was putting on the spider. The spider fitted tight and required considerable force for getting started on. When it did get to a point on the shaft which was not binding, it suddenly pushed up against the clutch pulley, due to the force still being applied, catching injured fingers between spider and clutch pulley.

What was wrong? The man didn't think. He should have had his hand on the outside of the spider instead of the inside.

The next step in accident prevention is the training of the workman to think about the possibilities of an accident and means of avoiding it in the performance of his every task.

Set the Example

Workmen follow much better than they can be driven and the first requisite to developing the habit of thinking safety on the job is for the foreman or superintendent to think and practice it. The accident records of most any company that has carried on organized safety work for a period of several years will reveal that the districts or plants which have shown the most gratifying improvement in accident frequency and severity has been the plant or district whose superintendent actively supported and participated in the safety work.

This evidence of an interest in safety on the part of the foreman or superintendent should start with the employment of the man. A few questions as to his safety training and accident record, when he is being interviewed for the job, will be very helpful in impressing the new man with the fact that he is *expected* to work careful and avoid accident.

This should be followed up more completely after the man has been finally selected for the job with definite instructions, written or verbal, on some of the more outstanding and specific dangers on his job to be guarded against. The new employee is usually zealous and eager to justify the confidence placed in him by reason of his selection for the job and is in a more receptive mood for advice or instructions at this time, than at any other period of his employment.

Safe Tools

One of the most effective ways to defeat the purpose of safety education is to provide defective and unsafe tools and equipment to work with. The inconsistency of this, after telling the workman of your interest in his welfare and instructing him as to how to avoid certain injuries, is so evident that he loses faith in your teachings and whatever enthusiasm that might have been engendered is readily dampened.

The possibilities of costs that can arise from the use of worn or defective tools and equipment is too great to take a chance with—merely to save the price of a new wrench or some other tool.

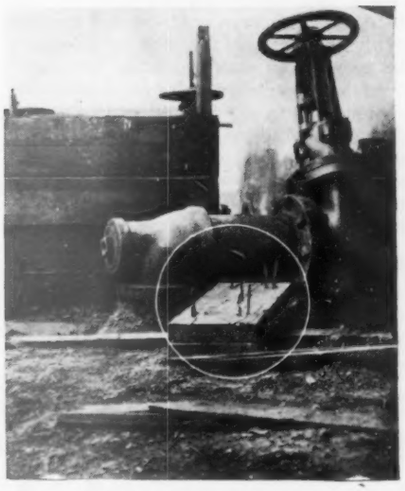
The task of training the new man in safe practices rests primarily, with the foreman and superintendent, however, their efforts can, and should be, supplemented by an organized educational program by the safety department, if the organization is large enough to justify such a department. If not, the service of a trade association safety department should be used as extensively as possible.

The principal of advertising is to get the name of the product or thing being advertised before the public as often and as advantageously as possible. Likewise, in creating and maintaining enthusiasm for safety it is necessary to keep it before the employee as much as possible. Per-

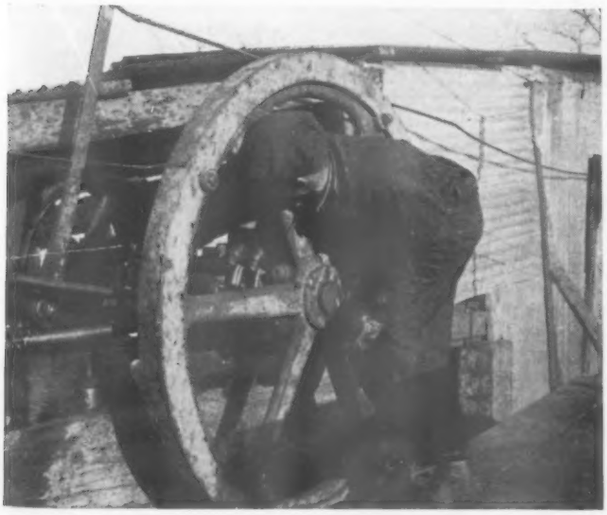
Things Thou Shalt Not Do in an Oil Field

Light Your Smoke in Gas Territory

Invite a Ton of Equipment to Roll on You



Allow Nails to Stick Up Like This



Work on an Engine Through the Fly Wheel

Leave Open Traps for Men to Step In

haps the most effective way of doing this, outside of the instructions and advice of the foreman and superintendent through personal contact, is to hold group meetings at frequent intervals, once a month or oftener if possible. Such meetings afford an opportunity for exchanging experiences, discussing accidents and the submitting of reports and suggestions on unsafe conditions or practices.

The meetings should be conducted in an informal way and the men encouraged to discuss accidents and accident causing conditions. If the man can be interested sufficiently to discuss his own accident experiences or contribute his knowledge of safe methods, that man will think and practice safety on the job. Too many safety meetings are given over to "high-powered" inspirational talks rather than following a definite and practical course of education. Such meetings can only be partially effective as they endeavor to create an enthusiasm for safety and fail to point out the way for application of safe methods to the work.

The plan of selecting a set of subjects for discussion at each meeting such as: "What precautions should be taken to avoid accidents in the work of 'hooking' off the beam?" has been successfully used by many companies in the conduct of the meetings. Many such questions can be asked about each and every job; however the answers to such question may be obvious to the experienced employee, the discussion of them is none the less helpful. It will afford an opportunity for the man to tell his experience and thereby win his active interest in safety work. It will also tend to re-impress him, if he is familiar with the dangers involved, to work carefully at all times and guard against accident.

The use of moving pictures or slides in shwoing certain hazardous practices is very good and rather generally employed. The picture is much more impressive than the spoken word and usually brings out details more vividly than they can be recounted in a paper or talk. If the pictures feature local conditions and show some of your own workmen they have the advantage of winning the interest on this fact alone. Such pictures can be made at moderate cost. However, The National Safety Council and some of the large petroleum associations have available for the use of member companies a large film and slide library and this service can be used entirely if the expense of developing pictures of local conditions seems prohibitive.

Investigate Accidents

We cannot avoid a condition the cause of which is not known. Hence, one of the most essential things in preventing accidents, is to investigate them. It is so often the case that we accept the report that a man fell from a ladder as final without going so far as to find out why and how he fell. A recent case is recalled where a foreman's field report gave the information that a man fell from ladder and sustained dislocated arm and that the accident was unavoidable. A later investigation revealed that a "chicken" ladder (one upright piece with cross pieces) was being used and that it was not braced or anchored in any way. When these facts were brought to the attention of the foreman he expressed surprise that he had not thought of them before as being responsible for the accident and gave every indication that he had not attempted to conceal anything in reporting the injury but had failed to familiarize himself with all of the details and to analyze the conditions.

When a piece of equipment is damaged or property destroyed we take the time to investigate thoroughly and find out why. Yet, we are permitting chances to be taken each day with a much more valuable asset than a gas engine or derrick without finding out why such chances are being taken and trying to stop them. When we reach the point that we appreciate our man power as of more value than physical properties and give the same thought and care of their protection as we do to the equipment we work with, we will have made a long step in the direction of accident prevention.

As production varies according to sands, depth and other conditions, so does safety work and its application vary according to the size and organization of the company. The educational program in its various ramifications, and modifications for unusual conditions, can only be treated in a brief way in an article on the general subject of safety such as this. It can be definitely stated however, that the superintendent who starts safety instruction with the employment of the new man, continues it throughout his entire organization and himself takes the responsibility of furnishing safe tools and equipment to work with, will show a gratifying reduction in accidents and will observe greater efficiency on the job and a finer spirit of cooperation among his men.

Japan Still a Potential Buyer Of Foreign *Oil*

By KING HAMILTON GRAYSON
Consulting Research Engineer

THE Japanese have prospected 13,000 acres of oil bearing lands on the Eastern shores of Sakhalin and while they have found only 16.1 per cent. dry holes in their exploitation, their engineers feel very doubtful that the promising field leased from Soviet Russia will give Japan and the Japanese navy much relief from the petroleum shortage. Under the Soviet-Japanese concession covering 300,000 acres of the Sakhalin district, the Japanese are to checker-board the tract with alternate tests. The work is being done by private Japanese interests, but it is very well known that the funds are furnished by the navy department. The main point, however, is that the concession was undertaken with the hope that sufficient petroleum would be found to meet the demands for home consumption and the requirements of the navy. Generally speaking, the Japanese engineers are keenly disappointed, and they are frank to admit they believe Japan will continue as a potential buyer for foreign oil.

Japan is far from being self-supporting when it comes to petroleum and its bi-products. Consumption for private use has reached the point of 2,600,000 koku or approximately 433,335 tons per annum, and if the requirements of the navy are taken into consideration, Japan must produce 5,000,000 koku—and these figures do not make any allowance for the constantly increasing demand for increased oil consuming devices. The two major point which rather confirm that Japan will continue to be a potential customer for foreign oil is shown by the following admissions from leading Japanese petroleum engineers.

1. They concede that the maximum output from the present fields has been reached.

2. They sincerely believe that the

hidden petroleum reserves are being rapidly exhausted.

The adoption of the American rotary system of well drilling in 1912 marked a turning point in the Japanese petroleum industry, but it was very short-lived as the following table of production indicates:

Year	Production in Koku
1917	2,509,000
1918	2,143,000
1919	1,964,000*
1920	1,950,000
1921	1,961,000
1922	1,799,000
1923	1,576,000
1924	1,580,000
1925	1,637,000
1926	1,496,000

*Drilling begun in Sakhalin.

Despite the above steady decline, the Japanese oil companies had to continually pour in a greater investment, and the vast increase shown between 1921 with Yen totalling 68,328,000 and that of 1924 with a total of 108,959,264 Yen is only an indication of one of the things which is disturbing to them. It now seems certain that it is the continual persuading on the part of the government officials which causes an interest in further development to continue. The prospecting licenses are disproportionately far greater than actual exploitation. This is due to such losses as that shown at Kurokawa where 1,000,000 koku was produced in 1915, the highest in Japanese petroleum history, but which has now dropped to 270,000 koku with a steady decrease becoming daily apparent. Meanwhile, the wells in that area have increased by 100 or more. In the Niitsu district production in 1907 was 950,000 koku, but again at that point it decreased to 550,000 koku by 1921 and this despite the drilling of 340 new wells. It is not to be wondered at that it takes governmental persuasion to induce private capital to continue to invest in the face of such returns.

While the presence of petroleum in Japan had been known for many years, it was not until 1900 that it really became an industry. The crude oil is found principally in Tertiary terrains which extend from Formosa to Sakhalin. The best districts which have been uncovered by ceaseless exploitation are those bordering on the Japanses Sea, especially at Niigata-ken, Province of Echigo, and at Akita-ken. The principal concessions in these areas date from 1913 and the interest in them was caused by a national fear of war without a formidable source of petroleum supply. At present the pertoleum shortage is being met by importations from the United States, Java, Borneo and Mexico, with a growing purchase from Soviet Russia.

The general situation regarding demand can be seen from the accompanying table. The figures for 1928 are consumption estimates by a Japanese engineer who has made a special study of the situation and who calls Japan's petroleum shortage, the nations greatest weakness.

Consumption of Refined Petroleum By Cases

Year	Gasoline	Kerosene	Neutral Oil
1924	623,000	794,000	2,545,000
1925	864,000	793,000	2,483,000
1926	1,049,000	570,000	2,589,000

Year	Fuel Oil	Lubricants
1924	600,000	1,519,000
1925	589,000	1,400,000
1926	586,000	1,380,000

Total Consumption by Cases

1924	6,081,000
1925	6,199,000
1926	6,172,000
1928	*6,750,000

*Estimate.

In 1916 the home production of Japanese petroleum was equal to 80 per cent. of the demand, whereas, despite more wells and new fields, the production in 1926 was only equal to 25 per cent. of the demand—a demand which is rapidly growing to such an extent that there is little hope of meeting it except through foreign purchases as shown by the following comparisons:

Production and Demand By Koku

1916	Gasoline	Kerosene	Neutral Oil
Output	76,800	517,000	444,770
Demand	90,870	982,400	444,760

1916	Fuel Oil	Lubricants
Output	750,000	235,390
Demand	788,600	320,000

1926	Gasoline	Kerosene	Neutral Oil
Output	223,600	119,000	523,500
Demand	1,007,900	721,000	1,120,000

1926	Fuel Oil	Lubricants
Output	117,400	276,000
Demand	1,158,000	800,000

Total Consumption and Production

1916	
Output	2,025,390
Demand	2,626,630
1926	
Output	1,259,500
Demand	4,806,000

Consequesntly, the importation of foreign oil must increase.

The Japanese navy secures the bulk of its oil from Borneo and California. The navy is now refining for its uses approximately 100,000 tons per annum. It is anticipated that this will be increased to a minmum of 200,000 tons before the end of 1929.

The Karafuto or Sakhalin area consists of two parts: that of the southern half acquired by Japan under the Treaty of Portsmouth, and the portion covered by the Soviet concession. The entire district covers an area of 13,934 square miles. In 1917 rich oil fields were apparently discovered along the west coast and heavy investments were made to realize what was then a very promising territory. The concession from the Soviets covers 1000 square versts of oil bearing land. One of the units of the concession brought in a yield of 70,000 tons of petroleum during 1927, and it is now apparent that this will be increased to 150,000 tons during 1928. However, all such increases are desperately needed to offset the vast decreases in other Japanese fields.

According to Japanese tradition, the first mineral oil discovered in the Echigo district was called one of the seven mysteries of the land, and it was regarded as a sacred inflammable water. The demand for petroleum and the possibility for greater output, makes it apparent that the home production will continue to be regarded as sacred since it cannot equal but a small portion of the requirements. It required American diamond drills and rotary equipment in 1921 to give the Japanese fields a commercial impetus, and this was increased in 1923 when the first sets of cable tools were introduced. This American production efficiency, however, will not apparently offset the decrease caused by a greater demand. There is one remaining hope for the Japanese petroleum situation. More than 3000 oil fields have been located in Japanese territory but only 30 have been fully exploited. The leading engineers rather agree that each new well will, however, only offset an exhausted point elsewhere and that the maximum peak of production has been reached and is past. If their judgment is confirmed, Japan must continue to be a potential customer for crude and refined products from foreign neighbors.

Crude Stocks Increased During December

New York.—Pipe line and tank farm stocks of domestic crude, east of the Rocky Mountains, increased 1,350,000 barrels during the month of December, according to returns compiled by the American Petroleum Institute. The net change shown by companies reporting accounts for the increases and decreases in general crude oil stocks, including crude in transit, but not producers' stocks at wells. During the same period, stocks of crude and refined products at refineries showed a net increase of 1,157,000 barrels, the increase being largely influenced by a sharp gain in stocks of gasoline.

Repressuring Semi-Flush Properties

By WALLACE DAVIS
Staff Representative

THE widespread adoption of gas for producing wells artificially in the past few years has found the major portion of its use on either the one-barrel well or the 5000-barrel well. The purpose has apparently sought one or the other extreme—that is, to recover all possible production rapidly through use of gas lift in the initial flowing stage, or to revive near depleted production by means of repressuring dormant sands through abandoned holes.

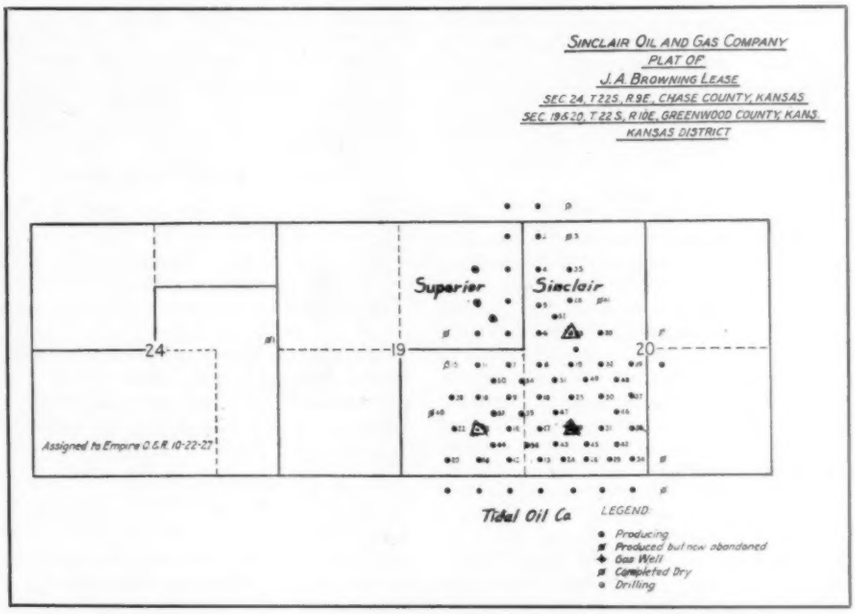
Successful experimenting over a period of several years is resulting in increased popularity among producers of another stage—the semi-flush well. The end sought here is to maintain as nearly as possible the fairly settled yield rather than to hasten the ultimate recovery or to increase an output that has, through several years of producing, reached the near-depletion status.

This latter stage, attempted through repressuring of sands with gas, deals with wells in the 15 to 40-barrel class. The motive is to prolong the life of the lease through saving gas as well as to maintain an even level in oil output. Thus the checking of an increasing gas-oil ratio is strived for, and, if the producer manages to anything like hold his own as far as temporary recovery is concerned he is finding unusual success.

An excellent example of starting repressuring work in the field's semi-flush stage is had in Sinclair Oil & Gas Company's J. A. Browning lease, Sections 19 and 20, Township 22s, Range 10e, Greenwood County, Kansas, in the "Golden Lane" trend.

The lease, shown on the accompanying plat, produced 3868 barrels daily during January, 1926. The rate of decline is shown through a daily yield of 2188 barrels in January, 1927, and 1254 barrels in January, 1928, representing a 43 per cent. decline in 1926 and a 42 per cent. decline in 1927. Production in September, 1928, totaled 1021 barrels, which represents an 18 per cent. decline during the first nine months of last year. Repressuring was started in February, 1928. Taking past declines as a criterion, the results of returning gas to the pay sand is indicated as cutting the percentage of decline from more than 40 to slightly more than 20 per cent., considering that the 18 per cent. decline in nine months of 1928 would continue on an even decline curve.

In the case of Sinclair Oil & Gas Company's Browning lease, little expense was involved in the repressuring program. Compressors were already installed in a gasoline plant used to strip approximately 1,225,000 cubic feet of gas obtained from the wells daily. After fuel for the plant and two 40-horsepower Superior gas engines used in the central power plant is utilized, approximately 500,000 feet of gas is available for repressuring.



The operators check each well monthly with an open flow gas tester. If a sharp increase in pressure is found in any well back pressure is applied to conserve gas. A program is now under way putting two gauge tanks on the lease and setting meters for obtaining regular records on the gas-oil ratio on individual wells. Effort is made to keep atmospheric pressure at the well heads.

Results of Sinclair Oil & Gas Company's efforts to check the crude decline show up better when taking into account the abandoning of three products to be used as key wells. Browning 27, making seven barrels, was converted into a key well in February, 1928, No. 21, making 20 barrels, and No. 23, making 15 barrels, were made key wells in May. Thus an immediate decline of more than 40 barrels was effected to be overcome through checking decline in the remaining producers.

Browning field, producing 42.5 gravity crude, was drilled first during 1924, and development continued on Sinclair Oil & Gas Company's property through April, 1927. The Bartlesville-Cherokee pay is had in the field, is topped at around 2300 feet, and ranges to an average thickness of 30 feet.

The following tabulation lists daily production of Sinclair Oil & Gas Company's Browning field by months, showing the decline in its semi-flush stage, and gives the gas-oil ratio for the nine months in 1928:

	Daily Production	Gas-Oil Ratio
January, 1926	3868	
February	3685	
March	3521	
April	3139	
May	3080	
June	2754	
July	2769	
August	2822	
September	2692	
October	2660	
November	2433	
December	2344	
January, 1927	2188	
February	2218	
March	2145	
April	1998	
May	1904	
June	1726	
July	1845	
August	1760	
September	1716	
October	1589	
November	1473	
December	1313	
January, 1928	1254	1087
February	1267	1114
March	1237	1207
April	1170	1233
May	1177	1220
June	1100	1260
July	1072	1284
August	1056	1365
September	1021	1293

A Pressure-Volume Decline Curve for

Measuring Gas Well Volumes

By C. P. PARSONS

Field Superintendent, Magnolia Petroleum Company, Cyril, Oklahoma

UP till last year the Nichlos sand in the Chickasha gas field had delivered into the carriers' pipe line 20 billion cubic feet of gas, 90 per cent. of which was measured and taken by one pipe line company. Accompanying that delivery was a decline of 65 per cent. in shutin pressure. There were 60 producting wells in the sand.

Also in that field were other gas sands with 190 producing wells that could serve as a check up on any technical deductions that might be based on the Nichlos sand.

With such an opportune and favorable condition as that it was apparent that a detailed analysis of the Nichlos sand might throw practical light on some economic field problems of the gas industry, especially on theories aimed at eliminating the necessity for blowing gas wells in the Chickasha field in order to get month to month volume readings as the basis for prorating delivery.

As an operator our problem was concerned directly with our 54 gas wells in that field but since the problem dealt with a "basis for prorating delivery" it meant that any conclusions we might arrive at must not only satisfy ourselves but must satisfy other operators in the field and the Corporation Commission.

Theories were subjected to that condition and a plan was developed, based on a detailed analysis of the Nichlos sand and later checked with other sands. It was completed last August, but before seeking actual application the plan was submitted to and endorsed by several prominent engineers.

For the sake of technical clarity and directness both in preliminary and formal discussion the claims of the plan were aimed specifically at the blowing of wells in the Chickasha field, especially the wells of the Magnolia Petroleum Company.

A formal hearing was held before the Oklahoma Corporation Commission on January 2, with many operators present. Permission was granted and the plan is now in operation on the gas wells of the Magnolia Petroleum Company in the Chickasha gas field. Several other operators have expressed their intention to use it.

The plan is primarily based on a "Pressure-Volume Decline Curve," that shows the percentage of volume decline that accompanies any percentage of shut-in pressure decline. The volume of a gas well is determined at any time by a simple problem in arithmetic. Thus the curve takes the place of blowing the wells to get month to month volume readings as a basis for proration of delivery.

That is the heart of the plan.

For purposes of comparison brief descriptions of the old and the new procedures for reading gas well volumes in the Chickasha field will be given.

Old Procedure

When a gas well is first brought in it is customary to allow the well to blow in the air long enough to clean itself of drilling water or mud. This blowing is quite impossible to eliminate, therefore cannot now be called waste. When the gas becomes clean an open flow reading is taken by the pitot tube method and the well is shut in at the master gate. The Christmas tree is connected up and the well is ready for connecting to the delivery line.

When the delivery connection is made and before delivery actually starts, the pipe line company blows the well and takes an open flow reading as the initial basis for figuring proration of delivery.

After that the well is blown regularly, usually once a month to correct for the natural volume decline due to withdrawal of gas or to see if the well is making water. These readings are used to figure the month to month proration of sales delivery. In many cases the amount of gas blown into the air to take a single open flow volume reading of a well was greater than the delivery for a month.

Advantages of Old Procedure

The taking of open flow volume readings of gas wells by the pitot tube method is fundamentally sound, has had long usage and generally accepted as simple, practical and equitable. Almost any experienced gas field man can take an open flow reading with a pitot tube and reference to the simple chart in general use that shows the open flow volume through different size openings at different pitot tube readings.

There may be reason for checking this simple chart as to its accuracy for present requirements but, even as is, the simple chart is used by all operators and therefore is uniform and equitable.

Objections to Old Procedure

The amount of gas blown into the air for the purpose of taking regular open flow readings is tremendous.

To take just one open flow reading of all the gas wells in the Chickasha field at this time requires blowing into the air at least 100 million cubic feet of gas, with a value at the well of about $10,000. At that rate the total yearly value of the gas blown into the air with readings taken monthly would be at least $120,000. The field is almost seven years old.

In addition to that loss of gas, there is considerable yearly expense on the part of the pipe line companies to reg-

IN THIS paper which Mr. Parsons read before the recent meeting of the Southwest Division of the Natural Gas Department of the American Gas Association at Shreveport, is pointed out that gas is unnecessarily wasted in making open flow tests of gas wells. The new procedure for making volume tests eliminates a large waste which has heretofore been associated with the periodic tests of flow, and brings about a large financial saving to the producer of the gas.

ularly blow and take open flow readings of the 250 wells in the field.

What is Necessary to Overcome Those Objections

For a plan to have any chance of being adopted and then carried out as a routine of field practice it must fit the conditions already mentioned and must be at least as practical and simple to operate as the old procedure. It should be free from involved calculations. It should be uniform, basically equitable and fundamentally sound.

New Procedure

The plan recently installed on the Magnolia Petroleum Company's wells in the Chickasha field retain all the advantages of the old procedure and eliminates the objections described. It has other advantages, summarized later.

Operation of the Plan

It is quite impossible to eliminate the first blowing of a gas well when the well is brought in, therefore this blowing is put to use in the plan as the time to take an official and initial volume reading. Since the pitot tube method is fundamentally sound, has long been used and generally accepted as simple, practical and equitable, it is used in the plan to take the initial volume reading. To make this reading official it will be necessary for the operator to inform the pipe line company when he intends to bring in the well. The pipe line company will then have a representative present to take an open flow reading witnessed by the operator or his representative. This reading may be witnessed by any other parties interested.

To take this initial reading the representative of the pipe line company is to have on hand a 50 inch water or mercury column and a 100 pounds spring pressure gauge. The well is to be gauged with water or mercury in the 50 inch column and only wells that cannot be so gauged are to be gauged by the spring gauge. The 50 inch mercury column can read volumes through an 8¼-inch opening up to 55 million cubic feet.

The well is shut in and allowed to build up to maximum pressure and the initial shut-in pressure taken. Since some wells are slow in building up to maximum pressure, this reading may be taken at any proper time before delivery is started.

Up to this point the operation of the plan is basically the same as the old procedure. The only difference is that the use of the spring gauge is limited and the initial reading is witnessed, both of which should increase in accuracy.

Month to Month Volume Readings

To obtain month to month volume readings the plan proceeds as follows:

Shut-in pressure readings are taken of each well once a month. Sub-normal shut-in pressure indicates water or other conditions. A well with such a pressure is listed for investigation.

If the pressure of a well is normal the percentage of pressure decline is determined from the initial and the present shut-in pressure readings.

By referring to the "Pressure-Volume Decline Curve" the equivalent percentage of volume decline is found.

This percentage of volume decline is subtracted from the official initial volume which gives the present volume.

That is all there is to the operation of the plan.

It is as simple as the old procedure; it is easier and decidedly less costly to maintain;
Is capable of being understood by field men and by operators in the Chickasha field who do not have a technical staff;
Is practical, uniform and equitable; it does not require any change or addition to the present equipment on the well, therefore costs nothing to install;
It converts into ultimate income gas formerly blown into the air;
And being a pressure method it holds back-pressure on the sand which prevents caving and premature drowning of wells close to edge water.

The only part of the plan that would arouse comment or question as to any possibilities of general applicability is the "Pressure-Volume Decline Curve."

Explanation of the "Pressure-Volume Decline Curve"

This curve was based on the actual percentage of pressure and volume declines of 20 normal wells in the Nichlos sand. Actual curves were made for each of these wells. The 20 curves were separated into four groups of five each and an average curve made for each group. These four average curves were platted together and there was less than one per cent. average variance between them, which showed that a sufficient number of wells were used. The final curve was made from those group curves.

Realizing that a curve based on data from one sand might not apply to other sands the curve was checked with 31 wells producing from two other sands. These wells had pressures ranging from 630 to 115 pounds and volumes from 21,000,000 to 900,000 cubic feet. The total volume of these wells actually read by open flow at the time of the check up was 326 million, whereas the total volume determined by the "Pressure-Volume Decline Curve" was 322 million, a difference of only four million, or 1¼ per cent. The delivery for that month was one per cent., so the final variance in the two methods, from an operator's standpoint, was negligible. Even if the delivery were the maximum 25 per cent. allowed by law, the final variance would still be negligible.

Fundamentally the margin of error is very small in this curve, but the curve should be subjected to many check ups in the Chickasha field. The simplicity of the curve is such that a check up can be made at any time for the satisfaction and understanding of the operator, and a simple basis for comparison is available.

General Possibilities of the Curve

It would appear at this point that so far as any possibilities of general applicability is concerned any gas field other than Chickasha would have to have a mass of past data to establish a curve.

This might be true, but there is an angle from which to look at this curve that might interest gas technicians and operators in general.

If we look at the Chickasha field merely as a basis for making the curve and then analyze the fundamentals of the curve itself we find a practical curve that corrects for deviation from Boyle's Law of gas volumes under high pressures and velocity. It would be called a "Deviation Curve."

Boyle's Law has done much to simplify understanding of problems of gas volume. A true Boyle's Law curve showing percentage of pressure and volume declines would be a straight line. Even if such a straight line curve were used in a dry gas field, including a field without a mass of past data, and with no extremely special problem present, the results of its usage by all operators in the field would be uniform and equitable for all practical purposes.

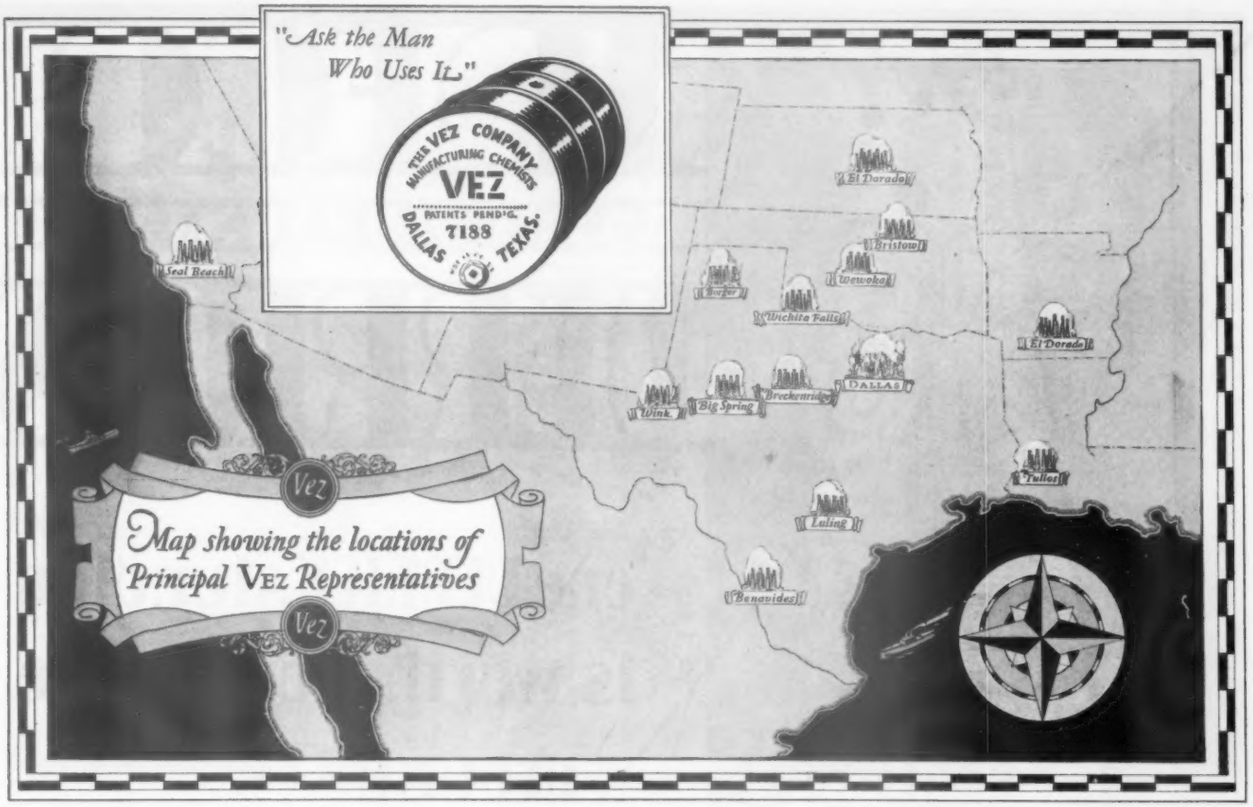
Assuming such an application to be true, there is greater accuracy and equitability possible from a decline curve that corrects for the factors in gas well volume readings that cause deviation from Boyle's Law.

Looking at the "Pressure-Volume Decline Curve" from this angle indicates that it is fundamentally sound and that it has other possibilities than the Chickasha field.

As a deviation curve it would be useful not only in determining the month to month volumes of gas wells but also in the estimation of deliverable gas reserves.

Washington, D. C.—Bids for the purchase of royalty oils accruing to the United States from a lease in the Kettleman Hills oil field, California, held by the Milham Exploration Company, will be opened in the office of the Secretary of the Interior March 1, next, it has been announced.

At present the government's royalty oil amounts to approximately 200 barrels a day, but this, it is explained, will probably suffer gradual decline until additional producing wells are drilled upon the tract, there now being but one well producing. It is stipulated that bids must be based upon the highest posted field price for oil of 25.0 to 25.9 A. P. I. gravity in the Midway-Sunset field, California, and must be stated as a differential in cents per barrel from such posted price. The contract is to run for a period of one year, beginning April 1.



There is a Vez formula for every form of cut oil. To insure satisfactory results under all conditions The Vez Company has trained representatives located in the principal oil fields. They can be called direct or reached through the Dallas office.

In delivery, users have the advantage of shipment direct from stocks so located as to minimize freight charges.

The Vez Company is organized for service and its sole aim is to serve you better.

REPRESENTATIVES IN PRINCIPAL FIELDS

Bristow, Oklahoma
Wewoka, Oklahoma
El Dorado, Kansas
Tullos, Louisiana
Wichita Falls, Texas
Breckenridge, Texas

The Vez Company

MANUFACTURING CHEMISTS

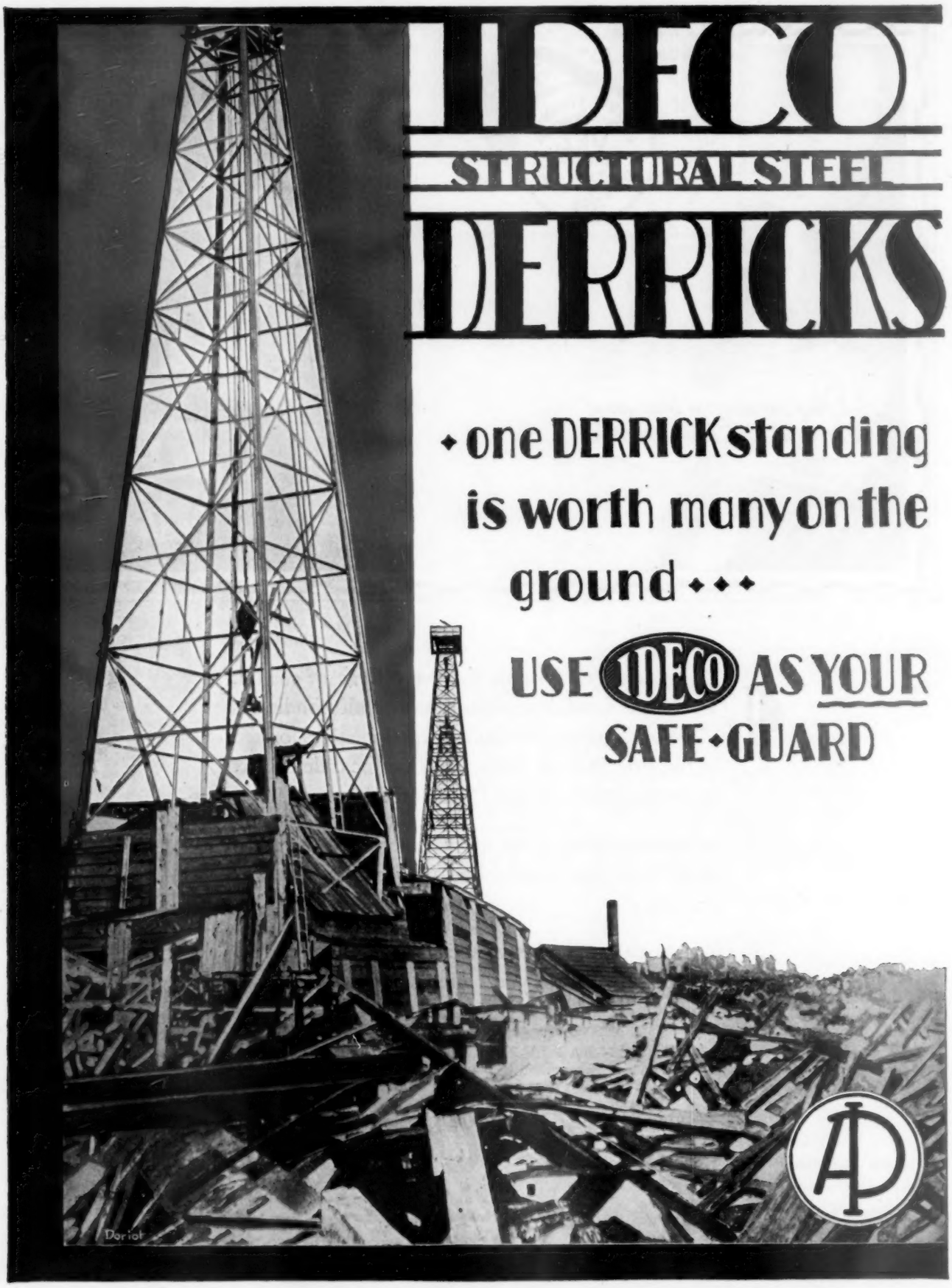
VEZ Oil Treating Process

PATENTS PENDING

DALLAS, TEXAS

2221-3 Laws Street • Telephone 7-4530

Luling, Texas
Big Spring, Texas
Wink, Texas
Borger, Texas
Benavides, Texas
El Dorado, Arkansas
Seal Beach, California



THE INTERNATIONAL DERRICK & EQUIPMENT CO., Columbus, Ohio—Los Angeles, Cal.

Branches and Stocks—New York, N. Y.; Detroit, Michigan; Dallas, Fort Worth, San Antonio, Houston, Mexia, Wichita Falls, Pyote, Odessa, Amarillo, Luling, Borger, Corsicana, Pampa, Panhandle, Big Springs, Trent, Orange, Bruni, Texas; Shreveport, Oil City, Lake Charles, Louisiana; El Dorado, Smackover, Arkansas; Wichita, El Dorado, Valley Center, Kansas; Tulsa, Oklahoma City, Tonkawa, Drumright, Shidler, Okemah, Seminole, Allen, Sasakwa, Maud, Wewoka, Oklahoma; Los Angeles, Torrance, Bakersfield, Taft, California; Maracaibo, Venezuela.
Export Representation—74 Trinity Place, New York City; Columbus Ohio; Houston, Texas; Los Angeles, Calif.

A Gulf Publishing Company Publication

The OIL WEEKLY

Member Audit Bureau of Circulations

VOLUME 52, NO. 9

FEBRUARY 15, 1929

Edited Weekly at Houston, Texas

SPENCER W. ROBINSON, EDITOR

TABLE OF CONTENTS

Special Features

Practice of Setting Strainers in Loose Sands ... 19
By Harry Pennington

Conserving Gas in Texas Panhandle ... 23
By George Reid

Winning the Interest of the Production Man in Safety ... 26
By C. L. Hightower

Things Thou Shalt Not Do in an Oil Field (Pictures) ... 27

Japan Still a Potential Buyer of Foreign Oil ... 28
By King Hamilton Grayson

Repressuring Semi-Flush Properties ... 30
By Wallace Davis

Measuring Gas Well Volumes ... 31
By C. P. Parsons

A. P. I. Committee Plans World-Wide Production Curtailment ... 36
By Grady Triplett

Regular Departments

Advertisers Index ... 106
Markets-Production-Crude Prices ... 39
United States Production Estimates ... 44
News of the Natural Gas Industry ... 48
Crude Oil Price Quotations ... 42
Completions for Past Week in All U. S. Fields ... 76
Permits Granted for New Wells ... 80
Wildcat Drilling Reports from All Important Areas ... 86
News from California Fields ... 62
North and West Texas Field Notes ... 55
Gulf Coast Field Development Notes ... 58
Oklahoma-Kansas Field Notes ... 51
News from Rocky Mountain Fields ... 66
Louisiana-Arkansas News Notes ... 54
Personal Mention — Men You Know ... 46
New Equipment, Catalogs, Bulletins, Books ... 101
Squeaks from the Bull Wheel ... 104

Copyright, 1929

Published Weekly
by
GULF PUBLISHING COMPANY

OFFICE OF PUBLICATION
3301 Buffalo Drive, Houston, Texas

R. L. DUDLEY, *President*
A. L. BURNS, *Gen'l Manager*
SPENCER W. ROBINSON, *Editorial Director*
J. KENT RIDLEY, *Managing Editor*

NEW YORK: Room 408-409, 250 Park Avenue, R. P. Swinsky, Manager.

PITTSBURGH: 510 Park Bldg., W. W. Pigue, Manager.

CHICAGO: Room 520, 624 S. Michigan Ave., O. R. Waller, Manager.

LOS ANGELES: 416-417 Haas Bldg., Wm. V. Gross, Manager.

TULSA: 913-916 Hunt Bldg., J. F. Carter, Jr., Manager.

FORT WORTH: 203 W. T. Waggoner Bldg., H. H. King, Manager.

Issued Friday of each week. Single copies 10 cents. Subscription price: Domestic $1.00 a year, Foreign $2.00 a year. Subscription restricted to those engaged in the producing and pipe line branches of the oil business or the manufacture and distribution of oil field supplies. Advertising rates on application.

A. P. I. Executive Committee Plans

World-Wide Production Curtailment; State Sanction Urged

By GRADY TRIPLETT

ST. LOUIS, Missouri.—Curtailment of oil production moved into a world-wide program today, when the executive committee of the American Petroleum Institute set up machinery for the purpose. Four regional committees will be named February 18. One will represent the Pacific Coast, another the Gulf Coast and Atlantic Coast regions; a third will include the interior section of the United States, while the fourth will consider Mexico and the northern part of South America. These committees will function after the fashion of regional committees, through which the code of marketing practices was brought before the American Petroleum Institute and then before the Federal Trade Commission.

After these regional committees have finished their work, they will form a central committee, which will fix a program for oil production curtailment on the world-wide scale. This meeting of the general committee should be held within 30 days.

At the conclusion of the executive committee meeting, E. B. Reeser, president of the Institute said: "The spirit of the leaders of the industry is optimistic. There is every reason to believe that stabilization will result in sufficient time to convert 1929 into a successful year for petroleum."

The world-wide program came late Tuesday as the conclusion of three days of deliberation. Many directors of the Institute met here Sunday. Monday there were several sessions, out of which came resolutions, one of which finally brought the action in behalf of world-wide production curtailment.

The climax came Tuesday morning, when leaders of the industry met in an informal conference. At this conference the situation within the industry was discussed thoroughly.

UP TO EXECUTIVE COMMITTEE

There was general agreement on the need for handling the situation from a world-wide viewpoint. Finally it was decided to leave the perfection of the plan to the executive committee of the Institute. Walter C. Teagle of the Standard Oil Company of New Jersey; R. C. Holmes of The Texas Company, W. S. Farish of the Humble Oil & Refining Company and others attended this conference.

Mr. Farish insisted on the carrying out of efforts to gain favorable legislation in Texas and California to allow oil producers to make agreements legally to the end of curtailing production. The matter of this legislation was before the directors of the Institute Monday night and was approved in a resolution, although it had opposition, and representatives of two large oil concerns refused to vote for it. It was the concensus of opinion, however, that some changes must be made in statutes of these two states before curtailment can be effected through agreements.

The industry, through committees, will strive to bring about the passage of bills now before the legislatures of both Texas and California, designed to allow curtailment through agreement.

WORLD-WIDE VIEW

R. C. Holmes insisted that the question of petroleum should be considered from the view point of nations, rather than from that of states. Walter C. Teagle also insisted on this broader viewpoint and placed it above the question of favorable state legislation in this country. Mr. Teagle said he thought the oil producers of the United States should consider their problems and then invite Sir Henri Deterding of the Shell Interests, and Sir John Cadman of the Anglo-Persian group to meet in this country and then lay down a program on that score. While the action of the Institute's executive committee does not specify the invitation to the two foreign companies, it seems probable that such will result.

If these regional committees and the one general committee follows the trend of suggestions at the informal conference of Tuesday morning the amount of oil that should come from the oil fields of the world will be determined by a scientific manner, with actual consumption as a basis. Then the several divisions of the country will be allotted prorata parts of this needed production and the effort made to reduce well output to the prescribed figures.

It is the hope of the leaders of the industry that the legislatures of both California and Texas, meanwhile will have passed measures to make these reductions by agreement legal. In case statutes are not passed, the effort will be made from a cooperative standpoint.

Mr. Farish, who favors the enactment of favorable legislation, said he believed the agreements could safely be made with the approval of the Federal Oil Conservation Board, even without the passage of new state laws or the modification of existing statutes.

The informal conference Tuesday was singular in that it gave evidence that the leading men of the petroleum industry are deeply concerned over the trend of production. It was reported that California will, unless output is checked, have 39,000,000 barrels of gasoline for delivery through the Panama Canal to Gulf Coast and Atlantic seaboard ports. Texas was listed as having a potential daily output of 1,000,000 barrels of crude

Committees Appointed to Start Immediate Move for International Action on Proration; Executives Pledge Support Pending Action

oil. While Oklahoma was not scored on possible output, it is known to stand ready to increase above present excessive production. Kansas also offers growing production. Against this bulwark of imminent production, the leaders of the industry offered a determined effort to take action to prevent market ruination.

There was difference of opinion when the directors of the Institute met to pass a resolution favoring the enactment of state laws to assist in curtailment, but there was no dissent in the informal conference on the question of the necessity of halting daily output both in the United States and in other countries.

In speaking in behalf of a cooperative effort, Mr. Teagle said he believed much had been accomplished through such efforts in the past and that he believed even greater good would come from an effort of world-wide scope. He did not, however, oppose the purpose of the Institute to lend assistance toward the enactment of more favorable state laws.

The meetings in St. Louis also were singular when considered in the light of the attitude of leaders during the past four years. Unit development and legislation were opposed at that time. Later, unit development came into favor as a voluntary effort. At the St. Louis meetings the Institute went on record as favoring legal measures to assist in curtailing production, although the action was not unanimous. The question of legislation came originally from the activities of the Federal Oil Conservation Board, with suggestions from President-Elect Hoover that state laws be amended to allow agreements in developing oil fields. Later the American Bar Association, through a committee of nine, offered two bills drawn to accomplish this. These measures have been before the industry several weeks, without drawing much support. Now, however, the industry through the Institute will endeavor to bring about the passage of favorable state legislation.

RESOLUTION ADOPTED

The resolution dealing with new statutes and the change of existing state statutes follows:

"Whereas, the committee appointed by the president of this Institute to study and determine the conditions existing in the oil industry, finds that there is an imminent overproduction of oil which, if not regulated, threatens to become acute and to result in the flow of oil into unnatural channels of consumption to the disadvantage of the industry and in the use for inferior purposes of this most valuable, limited and irreplaceable natural resource, to the serious injury of the public;

"And whereas this over-production of oil is due to present competitive methods of producing oil which result in great physical waste of both oil and gas through the failure, among other things, to recognize and observe the principle that the prevention of the waste of natural gas found in oil producing formation is of paramount importance in connection with the economical production and conservation of oil, and

"Whereas, the waste of gas cannot be prevented in an oil pool where there is diversified ownership. As long as any one operator, through ignorance of the above principle, or through selfish disregard for the rights of others and to capture more oil than underlies his property, disregards the above pinciple and continues physically to waste gas and oil and refuses to cooperate with his neighbors in accepting preventive measures;

"Now, therefore, be it resolved, that we, the Board of Directors of the American Petroleum Institute, favor the enactment of laws to prevent the waste of such gas by the various oil producing states in which natural gas is being unnecessarily wasted.

"Be it resolved, that pending the enactment of the ap- of laws in the various oil producing states that will permit agreements between operators in a single pool for the orderly development of oil and gas holdings therein, and the enactment of laws vesting in some public authority the power to prevent not only such unnecessary waste of gas, but also to prevent the continuance of drilling and producing practices which result in underground physical waste of oil or gas, including the power to make and enforce orders prorating the production of oil in a pool between the several leases therein, and establishing and carrying out a program for t' e orderly development of a pool through the orderly development by each operator of his separate holdings therein.

"Be it further resolved, that the president be, and he is hereby authorized to appoint such committees and take such steps as may be necessary to cooperate fully with other agencies in the accomplishment of these purposes, and that he be instructed to file a copy of this resolution with the Federal Oil Conservation Board."

CURRENT CURTAILMENT

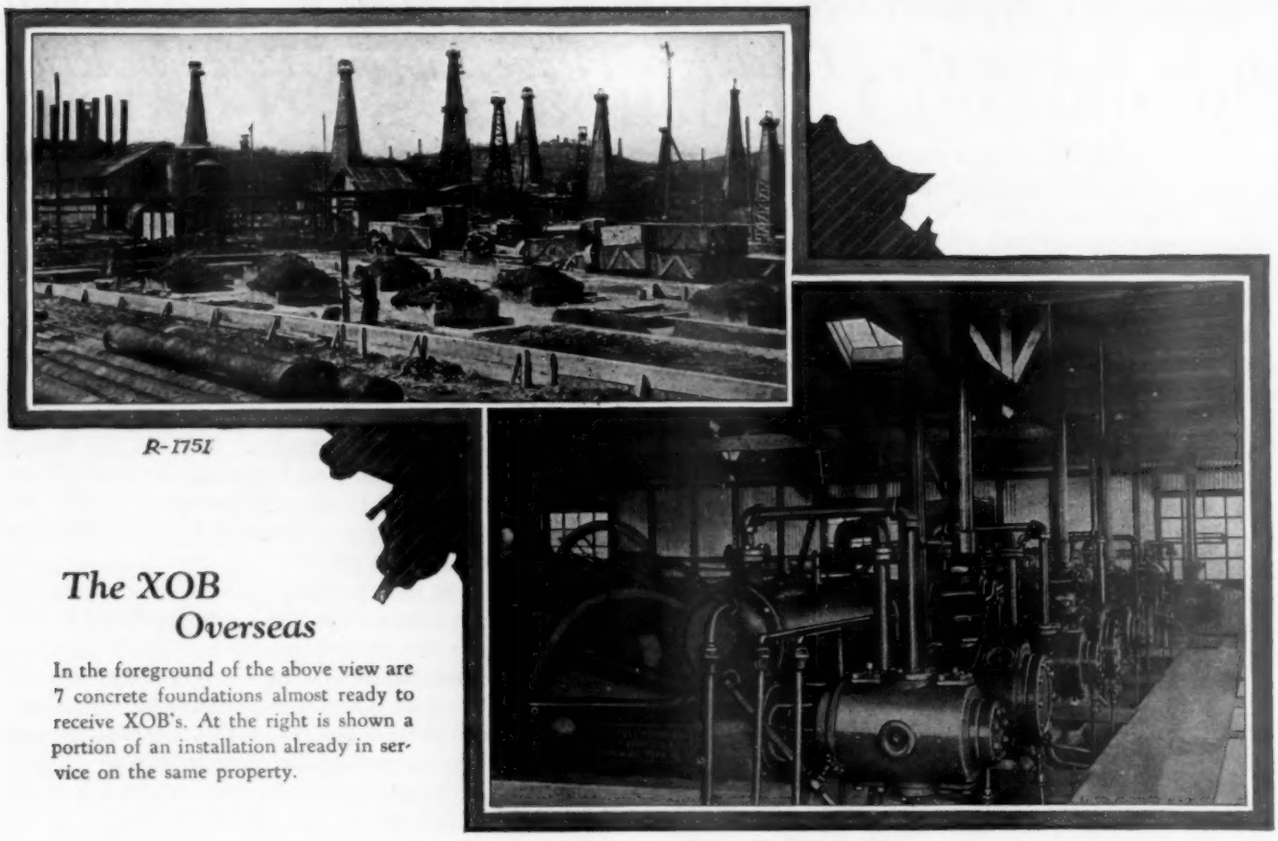
Another resolution was adopted in behalf of a program to prevent development, pending favorable legislation, as follows:

"Whereas, we the Board of Directors of the American Petroleum Institute, have this day by resolution favored the enactment of laws by the various oil producing states, where natural gas is being unnecessarily wasted, to prevent such waste, and

"Whereas, the now imminent overproduction of oil threatens to develop an acutely serious situation before such legislation can become effective, now, therefore,

"Be it resolved, that pending the enactment of the appropriate laws, the members of this board in their capacities as executives of companies producing oil from pools where over-production is imminent, hereby pledge their full powers, through all legal cooperative methods, to prevent the development of such over-production with its attendant waste."

The directors also passed a resolution in favor of a more extensive program in the building of good roads.



R-1751

The XOB Overseas

In the foreground of the above view are 7 concrete foundations almost ready to receive XOB's. At the right is shown a portion of an installation already in service on the same property.

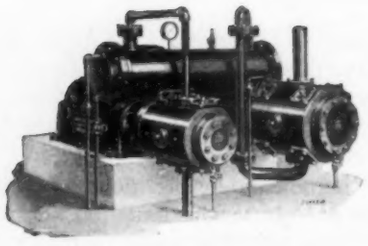
No Land is Foreign to the XOB

Not in just one field, but in most fields—

Not in just one country, but in many countries—

Not by just a few producers, but by scores of producers—the XOB Compressor has been accepted as the one best suited for gas-lift and air-lift work.

The XOB was designed especially to meet the needs of this service. It offers dependability, plus convertibility of drive.



INGERSOLL-RAND COMPANY, 11 BROADWAY, NEW YORK CITY

Branches or Distributors in principal cities the world over

Branch Offices in the Oil Fields:

BUTTE	HOUSTON	SALT LAKE CITY
BIRMINGHAM	LOS ANGELES	SAN FRANCISCO
DALLAS	MEXICO CITY	SEATTLE
DENVER	NEW ORLEANS	ST. LOUIS
EL PASO	PITTSBURGH	TULSA

Ingersoll-Rand

931-C

Say you saw it in The OIL WEEKLY

Markets--Production--Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

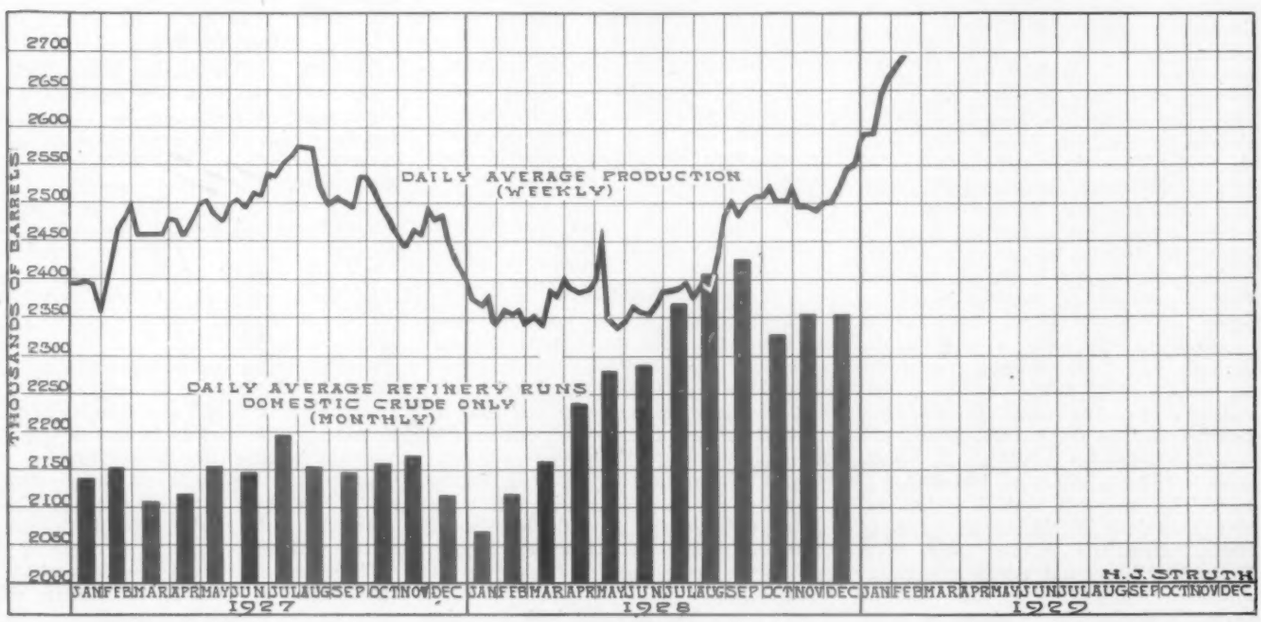
Extended Proration or Further Reduction Is Ultimatum

OKLAHOMA operators are beginning to heed the call for cooperative effort as a means of solving the overproduction problem. West Texas operators, while not in full accord on the subject, realize that proration is the only sound way out of their difficulties. On the other hand, California represents about the worst offender in unrestrained effort to completely demoralize the entire petroleum situation. There has been some talk in California of calling operators together for the purpose of promulgating proration plans, but evidently, it is only an oral eructation that is not even audible, above the din of hissing steam and clanking drilling engines. One thing that has been demonstrated during recent weeks is that it takes more than a threat to make the entire industry realize the seriousness of its condition. This is particularly the case in California, where a cut in the crude market is imminent, and yet drilling activities proceed forward at top speed. This makes it more than ever apparent that the only way to call the California aggregation to order is to make it unprofitable to produce oil at the present rate. That is exactly what California operators are headed for—a drastic reduction in posted prices.

Ray of Hope

As a matter of fact, a careful check-up of immediate future requirements reveals a decided ray of hope for the entire industry. That ray of hope lies not only in a considerably larger demand but in the immediate, full-fledged cooperation of every individual connected in any way with the production of petroleum. Proration has demonstrated its capabilities in Oklahoma and in West Texas. It has not, however, entirely solved the problem of overproduction in those areas because of decided lack of cooperation by all concerned. Under the new plan adopted in Oklahoma, it is believed that marked progress will be made in this direction. Operators in Texas are already aware that proration cannot be made successful by lifting their agreements. California operators have not learned anything in this regard, or what they have learned from past experiences seems to have been entirly forgotten. The situation in California, whether it is fully realized or not, is precarious; immediate action there is decidedly necessary if the industry expects to conduct this year's business at a profit. It is time for the leaders of California to demonstrate their leadership and bring order out of chaos. Unless someone with a big voice takes the rostrum there, the morale of the entire industry will be broken. After all, of what avail is constructive action in one section of the industry when other sections violate all rules of law and order? Oklahoma has taken the lead in a constructive effort to solve its own overproduction problem and, incidentally, to solve the overproduction problem of the entire petroleum industry. Unless proration is immediately extended

DOMESTIC PRODUCTION AND REFINERY RUNS



DETAILS OF CRITICAL FIELDS

Pool	Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Production Per Well	Rigs Up	Wells Drilling
WEST TEXAS—								
Hendrick	522	2,871,420	5,501	535	177,455	332	7	43
Church & Fields	189	203,465	1,077	187	27,440	147	.	.
Gulf-McElroy ..	70	56,225	803	70	12,945	182	. .	2
Yates	293	1,946,520	6,598	293	76,045	260*	4	9
Total	1,074	5,077,630	4,728	1,085	293,885	271	11	54
TEXAS PANHANDLE—								
Hutchinson Cty.	1,141	549,350	482	1,015	26,620	26	4	24
Gray County ...	326	135,380	415	316	21,550	68	8	42
Carson County..	184	60,445	329	160	5,895	37	2	15
Wheeler County	44	14,645	333	35	675	19	6	15
Moore County ..	11	6,145	559	9	2,210	246	4	6
Total	1,706	765,965	449	1,535	56,950	37	24	102
OKLAHOMA—								
Seminole	1,666	2,147,393	1,289	1,351	302,342**	223	56	236
St. Louis	363	376,462	1,037	304	128,249	423	11	60

*Production partially pinched. **Mission partially pinched.

to all prolific oil areas of the country, the industry faces a year of profitless prosperity.

Year Could Be Profitable

It is not tool late to restore order and make this year one of the best and most profitable in the history of the industry. The prospect of another large increase in demand for petroleum and its products presages an opportunity to turn apparent loss into actual profit. It is obvious, even now, that our rapidly expanding markets could readily absorb present excessive supplies if a determined effort is made, and realized, to reduce the present rate of production. It is not at all beyond the ability of the industry to accomplish this ideal; it can be accomplished within a comparatively short time if everyone concerned lends his full cooperation to bring about the desired attainments.

California was mainly responsible for most of the gain recorded in the national production last week. The total gain for the country amounted to 13,500 barrels, of which California contributed 11,800 barrels. East of the Rockies, the total daily average production was only 600 barrels above that of the preceding week. Texas showed a net gain of 2450 barrels, while the Rocky Mountain output increased 1100 barrels. Oklahoma, Kansas, North Louisiana, Arkansas and Eastern States reported declines in production. On the whole, the situation has shown practically no improvement, as it is still apparent that further gains will be recorded during the weeks immediately ahead. This fact is exemplified by the report of well completions in this issue, showing practically the same rate of drilling as during preceding weeks. The only hopeful sign of improvement on the horizon is the constructive step taken by Oklahoma operators; and that is still of an intangible nature. The immediate outlook is for further reductions in the posted price of crude, particularly in California, West Texas, Oklahoma and, possibly, in Pennsylvania. While there is some talk of further reductions in Oklahoma, it is believed that action will be deferred pending the prospective effect of proration and certain improvements anticipated in the Seminole area.

Although the volume of new production coming from completions in the high gravity fields of Texas is comparatively low at this time the major pipe line companies and independent crude purchasers are providing adequate service and a ready market outlet is available. The West Texas district has furnished considerable oil buying activity lately in the way of spot sales and contracts but with one exception all deals have involved the posted price. Fuel oil is holding the spotlight in the North Texas refining district and the better grades advanced to an average pirce of 70 cents per barrel within the past week with a demand running in excess of the current supply. Fuel oil is the only refined product that offers immediate prospects of taking an upward price trend as the output of this commodity has been reduced because of comparatively small demand and sagging prices for gasoline forcing a reduction of crude runs to stills. The gasoline market in the North Texas district has been affected by the unfavorable weather conditions and the U. S. Motor grade is available in large quantities at 6½ cents per gallon.

Oklahoma Move

The first important step taken this year for the protection of the crude oil markets was made by Oklahoma operators last week when they proposed at a meeting in Tulsa to limit the output of that state to 650,000 barrels, or to the market demands, which is 75,000 barrels under the present production. If the plan can be placed in working order it will be a notable achievement, since the state could show an increase of 50,000 barrels or more in a very short time if allowed to remain open.

Oklahoma operators now look upon the crude market in a hopeful attitude. Hopeful that the proposed plan will be successfully carried out, and further cuts in price avoided. The continuance of the Oklahoma shutdown, which is expected to be working immediately, will probably depend upon the attitude adopted by operators of other states. Oklahoma operators are particularly concerned with the California situation, where production is rapidly increasing, because of the ability of the west-coast state to move the oil to the East Coast cheaper by tankers than it can be transported through the Mid-Continent pipe lines.

Ray Collins, Oklahoma conservation umpire, has met with two refusals in circulating for signatures the petition to limit Oklahoma output to 650,000 barrels per day. Senator W. B. Pine and Wilcox Oil & Gas Company have not affixed their signatures to the petition. Collins still has several other companies to see. All of the major companies have entered the agreement. Collins is hopeful of getting all of the companies into the agreement, however, and expects to have the plan working immediately.

Collins will use various company men in making up his staff that will help him in carrying out the work. Plans for this department are rapidly assuming shape. Open flow gauges will be taken every 15 days to determine the potential flow, and the per cent. of proration will depend upon the amount of production over the 650,000 barrels per day set as the outlet of the state. Oklahoma at this time is doing about 80,000 barrels over that figure and is showing a steady increase.

Papoose Oil Company is opposing the plan to limit the Mission field production to 200 barrels per well, stating that it is unfair to curtail production in that area to that etxtent while permitting other and younger fields full participation in the state-wide plan of 650,000 barrels. It is likely that Mission will be taken under the state-wide agreement, which would mean that within another week Oklahoma's pinched in production would exceed 100,000 barrels per day.

Gasoline Weak

Group 3 gasoline market was a little softer during the week as a result of the recent crude cut and a very low consumption due to one of the most severe storms in recent years in the Middle West. U. S. Motor gasoline is quoted from 6½ to 7 cents; 60-62, 400 end point, was a little softer, demanding 7 to 7½ cents per gallon.

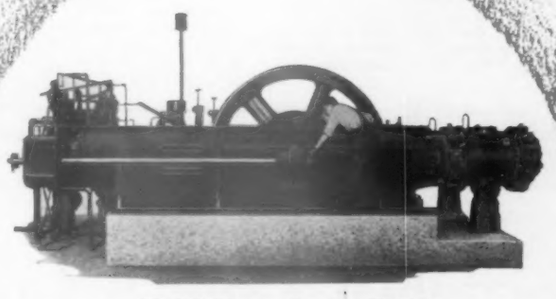
Refiners were slowing up crude runs to stills the past week, which was helping the refined market, but further curtailments are needed.

Higher gravity fuel and gas oils are so scarce that there seems to hardly be any. The little to be found was bringing higher prices; 28-30 and 30-32 fuel oil (if a price can be set on the present supply) is from $1.05 to $1.10 a barrel. Lower fuel oils, with no cold test, were sluggish with 16-18 and 14-16 grades being as low as 50 cents a barrel.

Three cents a gallon is the price of 32-36 gravity gas oil, with 38-40 distillate of

(Continued on page 46)

STR
TRANSIT
STRENGTH - ECONOMY - RELIABLITY - S
TRANSIT GAS ENGINES
TRANSIT GAS ENGINES



17x24" Single Acting Twin
170 H.P. 180 R.P.M.

NATIONAL TRANSIT
PUMP & MCH,CO.
OIL CITY PA.

CRUDE OIL PRICE QUOTATIONS

(Revised to February 12, 1929)

CRUDE PRICE CHANGES

Effective January 30, The Texas Company reduced Markham crude 10 cents a barrel, making the new price 90 cents.

EASTERN STATES
(Effective January 25, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$4.10
Brandford District Oil in National Transit Lines (Pennsylvania)	4.10
Penna Grade Oil in National Transit Lines (Pennsylvania)	4.00
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	4.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.45
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.75
Somerset Oil in Cumberland Pipe Line lines (Kentucky)	1.75
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (Effective Jan. 29, 1929)	.60
Keister (Pennsylvania)	1.20

CENTRAL STATES
(Effective January 25, 1929)
Posted by Ohio Oil Co.

Illinois	1.45
Indiana	1.27
Lima	1.50
Plymouth	1.18
Princeton	1.45
Waterloo	1.25
Wooster	1.62

WESTERN KENTUCKY
(Effective January 25, 1929)

All grades	1.53

MID-CONTINENT
(Effective January 25, 1929)
Carter Oil Company, Gulf Pipe Line Company, Sinclair Pipe Line Company, Prairie Oil and Gas Company and The Texas Company.

25 to 25.9gravity	.66
26 to 26.9 gravity	.72
27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 and above	1.44

MID-CONTINENT
(Effective January 24, 1929)
Magnolia Petroleum Company

Under 26	.60
26 to 26.9 gravity	.65
27 to 27.9 gravity	.70
28 to 28.9 gravity	.75
29 to 29.9 gravity	.80
30 to 30.9 gravity	.90
31 to 31.9 gravity	1.00
32 to 32.9 gravity	1.08

From 33 to 44 gravity and above, Magnolia Petroleum Company prices are the same as those of Carter Oil Company.

PANHANDLE
(Effective January 24, 1929)
GRAY COUNTY
(Humble Oil & Refining Company, Magnolia Petroleum Company, Gulf Pipe Line Company and Sinclair Pipe Line Company).

Below 29 gravity	.69
29 to 29.9 gravity	.75
30 to 30.9 gravity	.81
31 to 31.9 gravity	.87
32 to 32.9 gravity	.93
33 to 33.9 gravity	.96
34 to 34.9 gravity	.99
35 to 35.9 gravity	1.02
36 to 36.9 gravity	1.05
37 to 37.9 gravity	1.08
38 to 38.9 gravity	1.11
39 to 39.9 gravity	1.14
40 to 40.9 gravity	1.17
41 to 41.9 gravity	1.41
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.51
44 and above	1.56

WHEELER COUNTY
(Humble Oil and Refining Company and Magnolia Petroleum Company)

Below 30 gravity	.70
30 to 30.9 gravity	.76
31 to 31.9 gravity	.82
32 to 32.9 gravity	.88
33 to 33.9 gravity	.91
34 to 34.9 gravity	.94
35 to 35.9 gravity	.97
36 to 36.9 gravity	1.00
37 to 37.9 gravity	1.03
38 to 38.9 gravity	1.06
39 to 39.9 gravity	1.09
40 to 40.9 gravity	1.12
41 to 41.9 gravity	1.15
42 to 42.9 gravity	1.18
43 to 43.9 gravity	1.21
44 and above	1.24

CARSON-HUTCHINSON COUNTIES
(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Pipe Line Company)

Below 32 gravity	.72
32 to 32.9 gravity	.78
33 to 33.9 gravity	.81
34 to 34.9 gravity	.84
35 to 35.9 gravity	.87
36 to 36.9 gravity	.90
37 to 37.9 gravity	.93
38 to 38.9 gravity	.96
39 to 39.9 gravity	.99
40 to 40.9 gravity	1.02
41 to 41.9 gravity	1.05
42 to 42.9 gravity	1.08
43 to 43.9 gravity	1.11
44 and above	1.14

WEST TEXAS
(Humble, Gulf, Magnolia, The Marland Company and Southern Crude Oil Purchasing Company)*

Crane-Upton, Crockett, Pecos and Winkler Counties, all grades	.65

*Gulf does not post in Winkler County; Magnolia posts in Crane, Upton and Winkler Counties. The Marland Company posts only in Crane, Upton and Winkler Counties; Southern posts only in Crane, Upton and Winkler Counties.

CALIFORNIA CRUDE OIL PRICES AT THE WELL
(EFFECTIVE JANUARY 18, 1929)

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity	Ventura*	Signal Hill	Alamitos Heights-Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$ .85	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ .70	$ .70	$ .70	$ .70	..	$ .50	$ .50	$ .50	$ .50	$ .50	$ .50
15-15.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
16-16.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
17-17.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
18-18.9	.85	.75	.75	.75	.75	.75	..	..	.75	.75	.75	.70	.75	..	.50	.56	.56	.56	.56	.56
19-19.9	.85	.80	.80	.80	.80	.80	..	..	.80	.80	.80	.75	.80	..	.50	.62	.62	.62	.62	.62
20-20.9	.85	.85	.85	.85	.85	.85	..	..	.85	.85	.84	.80	.84	..	..	.68	.68	.68	.68	.68
21-21.9	.86	.89	.89	.89	.89	.89	..	..	.89	.89	.88	.85	.88	.89	..	.74	.74	.74	.74	.74
22-22.9	.87	.93	.93	.93	.93	.93	..	..	.93	.93	.91	.90	.91	.92	..	.80	.80	.80	.80	.80
23-23.9	.90	.97	.97	.97	.97	.97	..	..	.97	.97	..	.95	.94	.95	..	.85	.85	.85	.85	.85
24-24.9	.94	1.01	1.01	1.01	1.01	1.01	1.01	.94	1.01	1.01	..	.98	.97	.98	..	.90	.90	.90	.88	.88
25-25.9	.98	1.05	1.05	1.05	1.05	1.05	1.05	.98	1.05	1.05	..	1.01	1.00	1.01	..	.95	.95	.95	.91	.91
26-26.9	1.02	1.09	1.09	1.09	1.09	1.09	1.09	1.02	1.09	1.09	..	1.04	1.04	1.04	..	1.00	1.00	1.00	.94	.94
27-27.9	1.06	1.13	1.13	1.13	1.13	1.13	1.13	1.06	1.13	1.13	..	1.07	1.08	1.07	..	1.05	1.05	1.05	.98	.97
28-28.9	1.10	1.17	1.17	1.17	1.17	1.17	1.17	1.10	1.17	1.17	..	1.10	1.12	1.10	..	1.10	1.10	1.10	1.02	..
29-29.9	1.14	1.21	1.21	1.21	..	1.21	1.21	1.14	..	1.21	..	1.13	1.16	1.15	..	1.16	1.16	1.16	1.06	..
30-30.9	1.18	1.25	1.25	1.25	..	1.25	1.25	1.18	..	1.25	..	1.16	1.20	1.20	..	1.22	1.22	1.22	1.10	..
31-31.9	1.23	1.30	1.30	1.30	..	..	1.30	1.23	..	..	..	..	..	1.25	..	1.28	1.28	1.28	1.14	..
32-32.9	1.28	1.35	1.35	1.35	..	..	1.35	1.28	..	..	..	..	..	1.30	..	1.34	1.34	1.34	1.18	..
33-33.9	..	..	..	..	..	..	1.41	1.34	..	..	..	..	..	1.35	..	1.40	1.40	1.40	1.22	..
34-34.9	..	..	..	..	..	..	1.47	1.40	..	..	..	..	..	1.40	..	..	..	1.46	1.26	..
35-35.9	..	..	..	..	..	..	1.53	1.46	..	..	..	..	..	1.45	..	..	..	..	1.30	..
36-36.9	..	..	..	..	..	..	1.59	1.52	..	..	..	..	..	1.50	..	..	..	..	..	..
37-37.9	..	..	..	..	..	..	1.65	1.58	..	..	..	..	..	1.55	..	..	..	..	..	..
38-38.9	..	..	..	..	..	..	1.71	1.64	..	..	..	.	..	1.60	..	..	..	..	..	..
39-39.9	..	..	..	..	..	..	1.77	1.70	..	..	..	..	..	1.65	..	..	..	..	..	..
40-40.9	..	..	..	..	..	..	1.83	1.76	..	..	..	..	..	..	..	..	..	..	..	..
41-41.9	..	..	..	..	..	..	1.89	1.82	..	..	..	..	..	..	..	..	..	..	..	..
42-42.9	..	..	..	..	..	..	1.95	1.88	..	..	..	..	..	..	..	..	..	..	..	..

KETTLEMAN HILLS—55 degree Gravity and above $1.65 per barrel. *Union Oil Company.

CRUDE OIL PRICE QUOTATIONS (*Continued from Page 42*)

(Magnolia Petroleum Company)
(Effective January 24, 1929)

Mitchell County	$ .65
Howard-Glasscock County (shallow)	.65
Howard-Glasscock County (deep)	.65

Col-Tex Refining Company

Howard and Mitchell Counties	$ .80

MARKHAM

The Texas Company
(Effective January 30, 1929)

All grades	.90

LULING

All grades	.80

NORTH AND CENTRAL TEXAS

(Effective January 24, 1929)
Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude
(Humble Oil and Refining Company)

Below 25	.60
25 to 25.9 gravity	.66
26 to 26.9 gravity	.72
27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 and above	1.44

SOUTH TEXAS

Mirando and Salt Flat	.80

GULF COAST

(Effective January 26, 1929)

Grade "A" all companies	1.20
Gulf Coast Light Oil, below 25	1.05
25 to 25.9 gravity	1.07
26 to 26.9 gravity	1.09
27 to 27.9 gravity	1.11
28 to 28.9 gravity	1.13
29 to 29.9 gravity	1.15
30 to 30.9 gravity	1.17
31 to 31.9 gravity	1.19
32 to 32.9 gravity	1.21
33 to 33.9 gravity	1.23
34 to 34.9 gravity	1.25
35 to 35.9 gravity	1.27
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.33
39 to 39.9 gravity	1.35
40 an above	1.37

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9 Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

SOMERSET

Grayburg

Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

WYOMING-MONTANA

(Effective January 25, 1929)
Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	1.36
Grass Creek	1.36
Rock Creek	1.18
Lost Soldier	.95
Lance Creek	1.38
Mule Creek	1.10
Notches	.65
Big Muddy	1.28
Osage	1.38
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.48
Lander	.80
Simpson Ridge	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek
Midwest Refining Company

29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 and above	1.23

MONTANA

Sunburst	$1.65
Cat Creek	1.48
Lake Basin	2.20

NEW MEXICO

Artesia	1.08
Hogback	1.43

CANADA

(Effective January 26, 1929)

Oil Springs	1.97
Petrolia	1.90

LOUISIANA-ARKANSAS

(Effective January 26, 1929)
Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton and Cotton Valley*
(Atlantic Oil Producing Company, Standard of Louisiana, Magnolia Petroleum Company and

27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 gravity and above	1.44

*Shreveport-Eldorado's postings stop at above 40 gravity.

The posting on Cotton Valley is same as Caddo. From 36 to 52 and above the regular gravity schedule is followed.

The Texas Company pays North Texas gravity scale in North Louisiana.

STEPHENS

(All Companies)

Below 28 gravity	.70
28 to 28.9 gravity....N	.74
29 to 29.9 gravity	.78
30 to 30.9 gravity	.82
31 to 31.9 gravity	.86
32 gravity and above	.90

SMACKOVER

(All Companies)

Below 24 gravity	.75
24 and above	.90
Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	.85
Calion	.75

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

American Petroleum Institute Figures (Barrels of 42 Gallons)

	Total Month Jan. 1929	Total Month Dec. 1928	Week Ended Feb. 2	Week Ended Jan. 26
AT ATLANTIC COAST PORTS—				
Baltimore	370,000	470,000	.....	115,000
Boston	276,000	495,000	67,000	.....
New York	4,032,000	4,367,000	894,000	*701,000
Philadelphia	1,081,000	1,312,000	153,000	428,000
Others	487,000	270,000	65,000	278,000
Total	6,246,000	6,922,000	1,179,000	1,522,000
Daily Average	201,484	223,290	168,429	217,429
AT GULF COAST PORTS—				
Galveston District	.....	90,000	.....	.....
New Orleans and Baton Rouge	1,079,000	1,089,000	362,000	506,000
Port Arthur and Sabine District	127,000	73,000	62,000	.....
Tampa	40,000	.....	.....	.....
Total	1,246,000	1,252,000	424,000	506,000
Daily Average	40,193	40,387	60,571	72,285
AT ALL UNITED STATES PORTS—				
Total	7,492,000	8,174,000	1,603,000	2,028,000
Daily Average	241,677	263,677	229,000	289,714

*Revise.

RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

American Petroleum Institute Figures (Barrels of 42 Gallons)

	Month Total Jan. 1929	Month Total Dec. 1928	Ended Week Feb. 2	Ended Week Jan. 26
AT ATLANTIC COAST PORTS—				
Baltimore	491,000	154,000	104,000	147,000
Boston	.....	92,000	.....	.....
New York	517,000	765,000	*236,000	142,000
Philadelphia	367,000	583,000	60,000	.....
Others	246,000	95,000	.....	168,000
Total	1,621,000	1,689,000	400,000	457,000
Daily Average	52,290	54,484	57,143	65,286
AT GULF COAST PORTS—				
Total	160,000	75,000	.....	.....
Daily Average	5,161	2,419	.....	.....
AT ATLANTIC AND GULF COAST PORTS—				
Total	1,781,000	1,764,000	400,000	457,000
Daily Average	57,451	56,903	57,143	65,286
Distribution of Total California Oil Receipts is as Follows:				
Crude	.....	74,000	.....	.....
Gasoline	1,537,000	1,396,000	332,000	361,000
Gas Oil	70,000	141,000	68,000	.....
Kerosene Distillate	174,000	95,000	.....	96,000
Fuel Oil	.....	.....	.....	.....
Lubricants	.....	58,000	.....	.....
Total	1,781,000	1,764,000	400,000	457,000

*Revised.

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1927	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Ave.	United States Total
November	766,900	106,650	501,750	138,100	49,400	97,850	114,900	75,050	623,850	2,474,450	74,233,500
December	720,700	106,150	531,650	138,500	47,200	94,950	111,250	77,150	624,600	2,452,150	76,017,050
1928											
January	675,450	108,300	523,300	125,450	45,250	90,050	109,600	77,000	617,100	2,371,500	73,516,500
February	664,450	110,550	538,750	115,800	45,300	88,250	104,850	75,550	614,750	2,358,250	68,388,850
March	646,850	112,250	575,850	119,900	44,400	85,600	102,150	78,700	617,450	2,383,150	73,877,650
April	620,450	112,150	617,850	118,850	46,900	83,450	107,000	78,500	613,550	2,398,700	71,961,100
May	610,100	108,750	561,450	129,850	43,600	91,250	112,100	82,200	630,900	2,370,200	73,476,300
June	594,850	105,200	554,400	135,400	42,350	102,850	109,300	82,400	643,400	2,370,150	71,104,500
July	587,150	102,750	597,250	133,650	42,150	90,700	113,400	80,400	644,700	2,392,150	74,156,600
August	656,350	102,200	604,000	130,200	40,200	87,500	113,300	77,700	634,150	2,445,600	75,534,600
September	724,850	99,750	604,150	129,500	39,050	84,700	112,550	78,850	631,650	2,505,050	75,151,500
October	741,350	97,900	598,550	129,950	38,800	83,550	114,000	83,300	624,450	2,511,850	77,867,800
November	715,750	96,600	586,350	135,100	38,600	83,000	109,700	81,150	653,050	2,499,300	74,978,300
December	710,600	97,200	603,700	135,050	37,300	81,350	113,450	74,600	697,850	2,551,100	79,084,400
1929											
January	722,550	97,150	632,500	136,750	36,650	78,600	111,950	73,200	747,250	2,635,600	81,703,600
Feb. 2	728,700	96,800	641,100	139,550	35,950	77,400	110,600	71,850	778,100	2,680,050	18,760,350
Feb. 9	728,350	95,700	640,550	143,500	35,700	77,250	109,600	72,950	789,900	2,693,550	18,854,850
Increase	.....	.....	.....	3,950	.....	.....	.....	1,100	11,800	13,500	94,500
Decrease	350	1,100	550	...	250	150	1,000	.....	.....	.....	.....

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	Feb. 9	Feb. 2
Carson County	5,900	6,000
Gray County	21,900	23,300
Hutchinson County	26,050	27,100
Wheeler County	700	700
Others	2,300	2,500
Total	56,850	59,600

NORTH TEXAS

Archer County	17,600	17,700
Burkburnett	9,300	9,300
Electra	13,300	13,450
Iowa Park-KMA	6,300	6,000
Montague and Cooke Cos.	9,650	9,700
Wilbarger	27,550	28,450
Others	500	500
Total	84,200	85,100

WEST CENTRAL TEXAS

Brown County	9,200	9,250
Callahan County	3,600	3,500
Coleman County	3,550	3,250
Eastland-Desdemona	6,950	6,000
Jack County	1,700	1,700
Palo Pinto County	400	400
Shackelford County	11,600	11,650
Stephens County	6,450	6,500
Throckmorton County	700	700
Young County	7,600	7,700
Others	700	700
Total	52,450	52,050

WEST TEXAS

Crane-Upton Counties	52,400	51,000
Crockett County	2,050	2,400
Howard County	39,250	41,150
Jones County	7,050	7,000
Mitchell-Scurry Cos.	2,600	2,400
Pecos County	82,700	74,200
Reagan County	18,800	19,000
Winkler County	170,050	177,300
Others	1,750	1,600
Total	376,650	376,050

EAST CENTRAL TEXAS

Boggy Creek	3,050	2,750
Corsicana-Powell	9,100	9,100
Currie	500	500
Mexia	5,900	5,950
Nigger Creek	600	600
Richland	500	500
Wortham	1,400	1,400
Total	21,050	20,800

SOUTHWEST TEXAS

Dale	700	700
Laredo District	12,000	12,000
Luling	13,000	13,100
Lytton Springs	1,000	1,000
Somerset	600	600
Salt Flat	19,050	17,550
Others	3,000	2,550
Total	49,350	47,500
T'tl Tex. (Outside Gulf Coast)	640,550	641,100

TEXAS GULF COAST

Barbers Hill	6,500	3,250
Batson	1,400	1,350
Big Creek	5,250	5,000
Blue Ridge	4,300	4,350
Boling	2,100	2,300
Damon Mound	950	950
Goose Creek	6,300	6,300
Hull	10,100	9,850
Humble	4,700	4,800
Orange County	3,100	3,100
Pierce Junction	11,800	11,950
Raccoon Bend	1,850	2,000
Saratoga	950	1,000
Sour Lake	2,950	2,900
South Liberty	6,750	2,250
Spindle Top	33,900	32,950
Sugar Land	7,500	7,600
West Columbia	7,100	7,100
Others	4,500	5,000
Total	122,000	119,000
Texas Total	762,550	760,100

OKLAHOMA

Braman	3,700	3,700
Logan County	14,100	14,250
Blackwell	4,250	4,150
Hubbard	1,900	1,900
Thomas	950	950
Tonkawa	10,950	10,950
Garber	6,150	6,300
Burbank	22,950	23,000
Osage (outside Burbank)	26,050	26,100
Cushing	20,600	20,650
Yale Jennings	7,700	7,700
Davenport	1,650	1,650
Bristow Slick	19,000	19,000
North Okmulgee	14,200	14,200
Lyons Deaner	7,950	8,000
Cromwell	8,100	8,100
Papoose	3,500	3,500
Wewoka	5,350	5,350
Seminole	39,600	39,600
Bowlegs	41,100	42,400
Searight	9,100	9,200
Little River	101,600	101,900
Earlsboro	65,650	66,200
Duncan District	7,250	7,300
Graham	4,500	4,500
Fox	1,500	1,500
Healdton	13,100	13,200
Hewitt	8,700	8,700
Scholem Alechem	13,550	13,750
Pearson	1,750	1,600
St. Louis	127,150	129,850
Allen	28,950	29,500
Maud	40,100	34,950
Oklahoma City	5,600	5,650
Mission	700	750
Others	39,400	38,700
Total	728,350	728,700

CALIFORNIA

Santa Fe Springs	185,500	175,000
Long Beach	178,000	178,000
Huntington Beach	49,000	49,000
Torrance	15,000	15,000
Dominguez	10,000	10,000
Rosecrans	6,500	6,500
Inglewood	27,000	27,000
Midway-Sunset	73,000	73,000
Ventura Avenue	55,000	57,000
Seal Beach	31,500	31,500
Elwood-Goleta	23,000	20,000
Kettleman Hills	4,600	3,800
Others	131,800	132,300
Total	789,900	778,100

KANSAS

Greenwood County	22,500	22,750
Florence-Covert	900	900
Peabody-Ebling	3,250	3,250
Eldorado-Towanda	12,300	12,300
Augusta-Fox Bush	2,950	2,950
Rainbow Bend	1,100	1,100
Russell	3,450	3,400
Churchill	7,300	7,400
Oxford	6,150	6,350
Sedgewick	6,000	6,700
Others	29,800	29,700
Total	95,700	96,800

NORTH LOUISIANA

	Feb. 9	Feb. 2
Homer	4,000	4,050
Haynesville	5,550	5,500
Caddo Light	9,000	8,800
Caddo Heavy	2,700	2,750
DeSoto-Red River	3,950	4,000
Elm Grove	600	600
Bellevue	700	750
Cotton Valley	3,100	3,250
Urania	5,400	5,550
Pleasant Hill	450	500
Others	250	200
Totals North Louisiana	35,700	35,950

LOUISIANA GULF COAST

Bayou Boullion	200	500
East Hackberry	5,750	5,800
Edgerly	800	850
Evangeline	800	800
Lockport	5,000	3,700
Sorrento	800	800
Sulphur Dome	2,500	2,500
Sweet Lake	600	500
Vinton	4,200	4,200
Others	850	900
Total Louisiana Gulf Coast	21,500	20,550
Louisiana Total	57,200	56,500

ARKANSAS

El Dorado	4,850	4,850
Champagnolle	10,450	10,650
Smackover Light	6,750	6,900
Smackover Heavy	51,300	51,050
Stephens	1,000	1,000
Nevada	1,300	1,350
Lisbon	1,500	1,500
Others	100	100
Total	77,250	77,400

MOUNTAIN STATES

WYOMING

Salt Creek	33,300	32,150
Grass Creek	2,250	2,300
Elk Basin	750	600
Big Muddy	2,300	2,250
Lost Soldier	3,400	3,350
Rock River	2,400	2,450
Lance Creek	300	300
Oregon Basin	3,350	2,900
Others	5,650	5,700
Total	53,700	52,000

MONTANA

Cat Creek	1,400	1,450
Sunburst	6,750	6,750
Pondera	2,700	2,700
Total	10,850	10,900

COLORADO

Moffats (Craig)	1,050	900
Fort Collins	2,300	2,800
Florence	1,100	1,100
Others	2,050	2,100
Total	6,500	6,900

NEW MEXICO

Artesia	950	1,000
Hogback	450	500
Rattlesnake	450	450
Others	100	100
Total	1,900	2,050
Total Mountain States	72,950	71,850

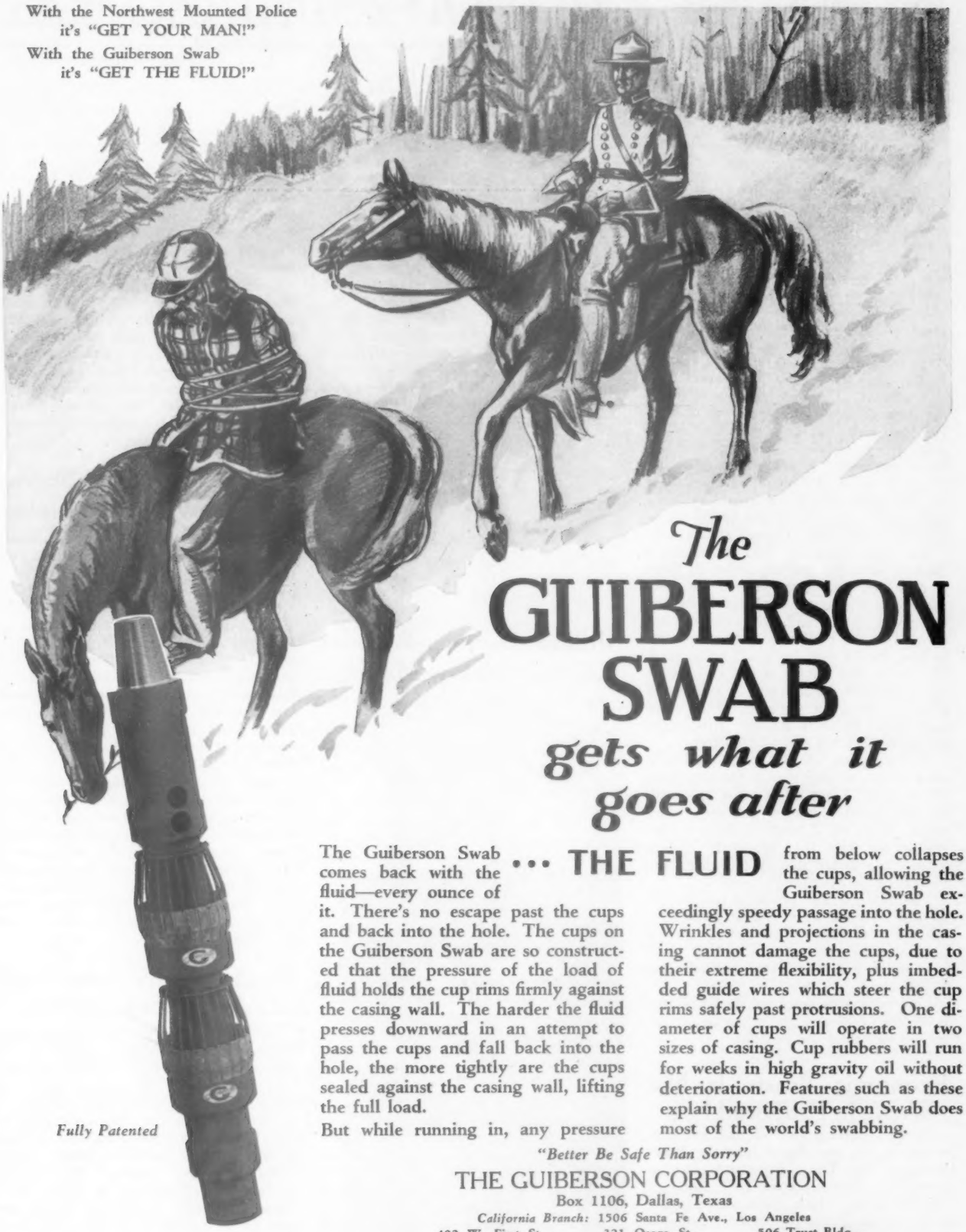
EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky., and N. Y.	109,600	110,600

PRODUCTION SUMMARY

East of Rockies	1,830,700	1,830,100
Total U. S.	2,693,550	2,680,050

With the Northwest Mounted Police
it's "GET YOUR MAN!"
With the Guiberson Swab
it's "GET THE FLUID!"



The GUIBERSON SWAB

gets what it goes after

The Guiberson Swab comes back with the fluid—every ounce of it. There's no escape past the cups and back into the hole. The cups on the Guiberson Swab are so constructed that the pressure of the load of fluid holds the cup rims firmly against the casing wall. The harder the fluid presses downward in an attempt to pass the cups and fall back into the hole, the more tightly are the cups sealed against the casing wall, lifting the full load.

••• THE FLUID from below collapses the cups, allowing the Guiberson Swab exceedingly speedy passage into the hole. Wrinkles and projections in the casing cannot damage the cups, due to their extreme flexibility, plus imbedded guide wires which steer the cup rims safely past protrusions. One diameter of cups will operate in two sizes of casing. Cup rubbers will run for weeks in high gravity oil without deterioration. Features such as these explain why the Guiberson Swab does most of the world's swabbing.

But while running in, any pressure

Fully Patented

"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas
California Branch: 1506 Santa Fe Ave., Los Angeles
402 W. First St., TULSA
321 Osage St., PONCA CITY
506 Trust Bldg., NEWARK, O.

GUIBERSON
BETTER BE SAFE THAN SORRY

Say you saw it in The OIL WEEKLY

Extended Proration or Further Reduction Is Ultimate

(Continued from page 40)

180 flash selling for four cents. Quantities of the latter was being demanded.

Kerosene is in fair demand, 41-43 water white quoted from 5 to 5¼ cents a gallon, with 32-44 bringing 5¾ cents.

California

The discovery of a new deep sand which promises to extend the Buckbee zone in both thickness and lateral extent, lent a further depressing effect on the crude market in California and caused a general "Oh! what's the use," feeling among operators who have been striving for curtailment. While oil has not started flowing from the sand, and there is no positive proof that the zone will produce a large amount of oil, it is taken for granted that another flood should be expected by mid-summer. The Buckbee zone is showing signs of weakening and a ray of hope had been seen; but the moral effect of the more recent discovery has cancelled this bit of optimism. A final effort to secure 80 per cent. of the operators' signatures for the conservation agreement is being made and such a step would be the salvation of the industry, it seems at this time.

The new Lawndale field is casting a shadow over the market, although there is only one producing well in the field, there is at least one consolation in the development of the field, however, and that consists of the realization that it will not be long until a showdown will be at hand. Within another month, it will be possible to tell whether the field will be a factor or a lemon. Sixty locations have been made and about 30 wells started. Production should be obtained around 5800 feet.

The structure of the crude market is considerably weaker than at the beginning of the year. Light oil is being absorbed, but the heavier grades are not in demand. After all, a barrel of oil is a barrel of oil, and the producers of the heavier grades are already suffering from the effects of over-production.

The gasoline war promises to come to an end within a week, but no agreement has been reached. The retail price is gradually creeping upward and a return to a figure near the former posted price is pobable.

Fuel oil shares much of the grief that is attached to heavy crude, the supply being greater than the demand.

Economic Waste Is Not Waste in Proposed Law

Austin, Texas.—The oil and gas conservation bill introduced into the lower house of the Texas legislature now in session by Representative J. R. Long of Wichita Falls, which omits all reference to giving the Texas Railroad Commission power of enforcing proration, was reported favorably Tuesday by the committee on oil and gas conservation.

Dispute arising over the proposed bill has resulted in numerous amendments being offered, and before decision is made sometime next week others are expected to be heard. A section which would empower the commission to establish proration in any field upon its own motion has been inserted into the conservation bill as finally drafted, although such a section was not included in the original Long bill.

Representative Long's proposed bill carries a penalty of $1,000 a day for violation, and provides that the commission shall hold hearings on such violations in the counties where they are alleged. It further provides that appeals from any commission decision must be heard in the Travis County district court.

The proposed bill emphasizes that waste of oil or gas must be regarded as physical rather than economic waste. If the bill is passed it will describe waste as follows:

"Neither natural gas nor crude petroleum shall be produced, transported, stored or used in such manner or under such conditions as to constitute waste, provided this shall not be construed to mean economic waste. The term 'waste,' in addition to its ordinary meaning, shall include (a) permitting escape into the open air of natural gas except as may be necessary in the drilling or operation of a well; (b) drowning with water of any stratum capable of producing oil or gas or both in paying quantities; (c) underground waste; (d) any natural gas well to wastefully burn; (e) the wasteful utilization of natural gas; (f) the creation of unnecessary fire hazards."

Million Barrels Winkler Oil Sold Below Market

San Angelo, Texas.—A new crude contract involving a total of 1,000,000 barrels of Winkler County crude to be delivered at a maximum rate of 4500 barrels daily is reported to have been made by the partnership interests of Murchison Oil Company and Cranfill Brothers Oil Company with the American Petroleum Company, subsidiary of The American Republic Corporation, at a fixed price of five cents below that posted for similar crude by major companies. This is the only contract of any consequence covering West Texas crude that has been made in recent months at less than the posted price, and supplements an old contract expiring in February between the parties.

The Murchison Oil Company and Cranfill Brothers Oil Company have contracted to supply the above oil from eight wells in the Hendrick field proper that registered a combined potential flow of 10,374 barrels on February 1, according to official proration figures, with an allowable daily production of 879 barrels daily during the current proration period. However, these two concerns obtained a temporary injunction giving them relief from the Texas Railroad Commission's proration rules on December 19, 1928, to the extent of 4000 barrels daily on the above wells, and are producing this amount. Murchison Oil Company and T. P. Lee et al's single producer on a small tract in the north end of the field also was given a temporary injunction against proration enforcement to the extent of 1400 barrels daily, but the oil from this particular well is not included in the new crude contract, although Murchison's one-half of the production has been applied against the old crude contract, and an effort is being made to locate a market for the future production.

The American Petroleum Company has a six-inch line from the Hendrick field to a tank car rack in Ward County, and is also handling all oil produced by the Republic Production Company, with deliveries going to storage at Houston via tank cars. The former's crude contracts with the Rio Grande Oil Company, El Paso, and the Louisiana Oil Refining Corporation expired recently, and have not been renewed.

Contrary to expectations, no other producers in the three separate West Texas fields controlled by proration rules have elected to jump proration enforcement by obtaining a temporary injunction against the Texas Railroad Commission, and a court hearing on the injunction granted to Murchison Oil Company and Cranfill Brothers Oil Company will probably be set for the near future.

Toll Telephone Service To New Mexico Field

Midland, Texas. — Arrangements have been made by the Southwestern Bell Telephone Company to provide the first direct telephone service out of the Southeastern New Mexico oil and gas area by building a toll line from Kermit, located near the Hendrick field, Winkler County, on the poles to be used by The Texas Pipe Line Company in conjunction with the latter's new crude line. Announcement was made last week that The Texas Pipe Line Company would start work immediately on laying a 25-mile 10-inch line from the Hendrick field to a point near Jal, Lea County, New Mexico, to serve two oil wells owned by The Texas Company, Amerada Petroleum Corporation and Columbian Carbon Corporation, and also to handle oil produced in the same area by other concerns. This pipe line extension will tie into the combination 10- and 12-inch line being built from West Texas district to Houston by The Texas Pipe Line Company.

Shell Concrete Tank Again Taking Oil

McCamey, Texas. — Shell Petroleum Corporation resumed pumping oil into its 1,000,000 barrels capacity, concrete reservoir located near McCamey early this week after draining the tank because of a break in the bottom. The restoration of this large storage tank into service materially relieves the West Texas storage situation for this company. The tank developed the leak during the last week in November, 1928, with about 500,000 barrels of oil contained therein, and about 60,000 barrels were lost before Pecos River water could be used to float the oil while draining the reservoir for repairs. Pumping of water into the tank held down the oil loss. Shell Petroleum Corporation has a similar reservoir at Monahans, Texas, that has been in service since last April, and no leaks have developed.

PERSONAL MENTION-MEN YOU KNOW

Frank Cullinan, vice-president of the Republic Production Company with headquarters at Dallas, Texas, departed late last week on a cruise to Panama and other South American countries, but will return late this month to attend the annual meeting of The American Republics Corporation.

Gustav Peters, consulting geologist, 35 years of age, died in a Fort Worth, Texas, hospital February 7 from gunshot wounds received while at his home several days previously. Lunacy charges have been filed against his assailant.

L. A. Bell, representative of Tirnidad Oil Fields, Ltd., is spending a three months leave in the United States after a period of two years spent in Trinidad.

Col. R. C. Kuldell, general manager of Hughes Tool Company, Houston, returned last week from a business visit to Los Angeles.

Mills Bennett, president of Mills Bennett Production Company, Houston, spent the past two weeks in the East.

Herman W. Penterman, assistant manager of the land department of the Shell Petroleum Corporation in Tulsa, has been made manager of the company's land department in Houston, Texas.

N. Lykes is the new superintendent of the land department of the Indian Territory Illuminating Oil Company, with headquarters at Oklahoma City. The company has taken 33 rooms on the sixth floor of the Commerce Exchange Building at Oklahoma City. J. Gus Patton, chief civil engineer; Mark Erb, drilling superintendent; Pat Sutton, production superintendent; and L. M. Jewett, office manager, Tom Stevens, superintendent air lift; and W. W. Clawson, district geologist, are also in Oklahoma City.

Paul Edkin, of The Babcock & Wilcox Tube Company, has returned to Tulsa after a year of study at the company's plant at Beaver Falls, Pa.

F. K. Harris of the Lee C. Moore Company, who has been purchasing agent at Tulsa, has been transferred to the Casper division, where he will take charge of the district. H. G. Houston has been made purchasing agent at Tulsa.

W. E. Dunlap, formerly assistant manager of the production department of the Richfield Oil Company, has been appointed production manager, to replace John McKeon, who recently retired to become an independent producer. "Steve" is a graduate of Stanford University, class of 1915.

Wheeler Keever, 69, of Marietta, Ohio, died at a hospital there February 6 from injuries which he sustained when struck by an automobile on February 2. Mr. Keever was referred to in a news dispatch as a "Washington County oil millionaire." He made a fortune in the Spindle Top oil field in Texas. He occupied a 1000-acre estate, one of the show places of the Muskingum Valley. He is survived by his widow and two daughters.

Hu M. Harris, mechanical engineer, who recently joined the Humble Oil & Refining Company, Houston, succeeding Robert Burnett as research engineer in the petroleum engineering department. Mr. Harris was born in Jackson, Tennessee, in 1878. He attended Vanderbilt University, Nashville, Tennessee, in 1899, and later Purdue University, Lafayette, Indiana, being graduated from this institution in 1902. He served as instructor in Purdue in 1903. From 1904 to 1911 he was general superintendent of the Southern Engine & Boiler Works, Jackson, Tennessee. From 1911 to 1915 he was general manager of the City Water Works of Jackson, and the following three years was commissioner of Public Utilities of Jackson. In 1918 he joined Lucey Manufacturing Corporation, Chattanooga, Tennessee, as field engineer, and later was made chief engineer of this corporation serving as field engineer throughout the oil fields of the United States until 1927. Mr. Harris has been actively connected with the American Petroleum Institute since its inception. He has made a number of patents on oil field drilling equipment. His connection with the Humble Oil & Refining Company became effective in December, 1928.

HU M. HARRIS

R. R. Penn Heads New West Texas Company

Dallas, Texas.—The Penn Oil Company has been incorporated with a Delaware charter to engage in the oil producing business in the Southwest, but principally in the West Texas district, and will maintain headquarters on the third floor of the American Exchange Bank Building, Dallas. The new concern has an authorized capital stock of $2,000,000, with approximately $1,250,000 in the first issue, and has taken over the wildcat drilling tests, leases and other oil holdings owned by Robert R. Penn, who is president of the company. The directors include R. R. Penn, J. M. Willis, Jr.; John R. Black; Marion S. Church; Heath M. Robinson; R. A. Wilson and Marion A. Knight, all of Dallas; and E. C. Marrs, San Antonio. J. M. Willis Jr., is secretary-treasurer, and Heath M. Robinson and H. S. Forgeron are geologists. W. A. Black, who has been residing at Albany, Texas, will be field superintendent, with headquarters at Midland, Texas; and Locke Purnell, scout, will also make headquarters at the latter point.

A. C. Willingham, II, general manager of the Lucey Manufacturing Corporation with headquarters at Chattanooga, Tennessee, is on a tour of the Mid-Continent field in company with F. E. Bernsen of Tulsa, vice-president of Lucey Products Corporation. They will visit the fields in Oklahoma, Texas and other states.

Dr. C. A. Heiland, professor of geophysics at the Colorado School of Mines, Golden, Colorado, will give a series of lectures in geophysical prospecting at Columbia University, New York City. The courses will comprise torsion balance, magnetometer, seismograph, and electrical prospecting, and will be given from the beginning of February up to the Middle of March. Dr. Heiland will also attend the annual meeting of the American Institute of Mining and Metallurgical Engineers. Following the lectures he will go to Fort Worth for the meeting of the American Association of Petroleum Geologists.

Paul Knoz of Fort Worth was in Tulsa early in February, en route to Independence, Kansas, where the forty-ninth wedding anniversary of his mother and father, Mr. and Mrs. J. B. Knoz, was celebrated February 5. Paul still claims Tulsa as part time headquarters, although the West Texas development has had the major part of his activities for some three years.

W. B. Jennings, of the C. & G. Cooper Company, Mt. Vernon, Ohio, will return to Mt. Vernon the latter part of this week after an extended tour of the California oil fields.

THE NATURAL GAS INDUSTRY

Gas Association Leaders Confer at Los Angeles

Los Angeles.—Officials of the Advisory Council and Executive Board of the American Gas Association, 35 in number, met in conference here February 6 and 7. In addition to discussing immediate and future problems of the combined natural and manufactured gas industries, numerous important addresses were given by prominent leaders of the industry. Among the important subjects covered at the meeting were: a nation-wide survey of present conditions and future possibilities for each major geographic division of the United States and also for Canada, presented by recognized authorities from the localities covered; "Agencies of Progress," by Alexander Forward, managing director, American Gas Association; "Research Program of the Gas Industry," by H. C. Abell, vice-president, Electric Bond and Share Company; "Conservation of Natural Gas," by A. F. Bridge, vice-president, Southern Counties Gas Company; "Utilization of Refinery Gas," by W. S. Yard, vice-president, Pacific Gas and Electric Company; "Storage and Measurement of Large Volumes," by S. W. Meals, chairman, Natural Gas Department, American Gas Association.

Delegates to the conference arrived in San Bernardino, California, on February 5, where they were met by officials of Los Angeles gas companies and escorted to the Mission Inn, Riverside. Following this, the party was brought to Los Angeles over a route that included the citrus belt of southern California. At the conclusion of the conference, on February 7, the delegates were conducted on a tour of the southern part of the state, going as far south as Coronado.

Gasoline, Black Plants For Richland Parish

Shreveport, La.—The Century Carbon Company of Illinois will start work within the next 30 days on a $500,000 carbon black plant at Crew Lake, Richland Parish, utilizing gas from the Richland field, and will also build in the same vicinity a gasoline extraction plant costing $100,000, it was announced last week.

The announcement was made by J. T. Austin and H. D. Millsaps, representing the Millsaps Realty Company, which owns approximately 3000 acres of land in and near the Richland gas area, and which will furnish gas for the new projects.

The Century Carbon Company is headed by R. I. Wishnick of New York.

The carbon black plant at Crew Lake will have four units and will utilize 20 million feet of gas daily in carbon black manufacture. The two plants are expected to employ 100 men.

Only a few days ago the Industrial Gas Company announced the building of a gasoline plant at Alto, Richland Parish, to cost $300,000. This company has just acquired 3200 acres from W. C. Feazel for a consideration said to be $370,000.

Start Work of Gas Line To San Francisco

San Francisco. — Starting at a point about midway between Buttonwillow and this city, actual construction of the large pipe line which is destined to supply this and other Bay cities with natural gas is under way. Construction started in both idrections from a point in San Benito County. The line will be finished by the latter part of August and will cost about $15,000,000. It will be at least 250 miles long and will carry gas from the Buttonwillow and Kettleman Hills districts, the former having been proven for gas only. In building the line, the possibility of a future shortage has been recognized, with several fields being accessible in case of emergency. Some of the larger San Joaquin Valley cities will be served with branch lines leading from the main trunk line.

Work Progressing on Gas Line to Salt Lake

Salt Lake City, Utah.—Work on the gas pipe line from southwestern Wyoming to Utah and Idaho towns is progressing as steadily and rapidly as the bad winter weather will permit. The main trunk line is being laid by the Uintah Pipe Line Company, organized by interests identified with the Ohio Oil Company for the purpose. About 400 men are employed on the right-of-way between Salt Lake City and Coalville, Wyoming. The line will consist of 122 miles of 18-inch pipe, and the entire system will consist of about 334 miles of large pipe. The line will cost about 18 million dollars.

D. W. Harris, vice-president and general manager of the Arkansas Natural Gas Corporation, Shreveport, Louisiana, has announced appointment of T. J. Heard as general auditor of the Arkansas Natural Gas Company, succeeding E. N. Watkins, recently promoted to secretary of the company.

Mr. Heard was for three years chief accountant of the Fort Worth Gas Company, later joining the forces of the Lone Star Gas Company at Fort Worth.

He came to Shreveport in September, 1914, as secretary-treasurer of the Reserve Natural Gas Company, which position he held at the time of his promotion, the latter having been acquired by the Arkansas Natural Gas Company in July, 1928.

Mid-Continent Buys Oklahoma City Leases

Tulsa.—Mid-Kansas Oil & Gas Company has purchased the Ramsey Petroleum Corporation holdings in the Oklahoma City oil field. The transaction includes a drilling well in Section 24-11-3w, and 80 acres under it, 100 acres in Section 18-11-2w, and 110 acres in Section 23-11-3w, or 290 acres in all. The consideration was not announced but rumors are that it was close to $2,000,000.

This is the second major sale of the Ramsey Petroleum Corporation during the past year. About a year ago it sold its large Allen pool district holdings to the Sunray Oil Company. W. R. Ramsey is president, and W. E. Ramsey, vice-president. Both reside in Oklahoma City. The company will continue its wildcat operations in the Mid-Continent and other fields, where it has been very active.

Committee to Meet on Wild Richland Well

Shreveport, Louisiana. — W. F. Chisholm, supervisor of the minerals division of the Louisiana Conservation Commission, called a meeting of a special operators committee at Monroe on Tuesday of this week to discuss plans for the final killing of the crater at Pardue 1 in Section 6-15-6e, Richland Parish, owned by W. C. Feazel, which blew out several months ago and has only been partly killed. The crater is now approximately 50 feet in diameter and approximately 35 feet deep.

It is understood that when Feazel recently sold his holdings to the Industrial Gas Company for $370,000 the sum of $20,000 was set aside for work of killing the Pardue crater.

At the meeting it was proposed that workmen go over the present casing left in the hole with 20-inch pipe cementing on the outside and attempt to snub in tubing and attempt to kill the gasser with mud.

Round Mountain

Bakersfield, Calif.—Reynolds Oil and Gas Company has completed No. 1, Section 6-28-29, as an 800-barrel well, giving the new field, lying a short distance north of Round Mountain, an unusual producer and adding greatly to the possibilities of the district. This is the second well completed on the small structure lying along a fault which has accounted for other fields. Completed at the unusually shallow depth of 1575 feet, the well is very important, although the oil tested only 16 gravity. The cost of drilling such wells is low, when compared with much smaller wells which produce a lighter oil.

It cost him $980.00

just because he failed to ~ ~ ~ ~ ~

Driller Smith has a fishing job. He borrows a fishing tool from Driller Jones on the next location. Driller Jones has A·P·I· joints but Driller Smith has not. The tool won't fit so he goes to the machine shop and has it recut, losing one half day. While he is shut down his pipe sticks in the hole. He loses ten days and the fishing job costs him $1,000.00. He failed to standardize. If he were using "Brewster" A·P·I· Joints his loss would have been about $20.00. *Think it over.*

Warehouses: Oklahoma City Houston Fort Worth

BREWSTER A·P·I· *Tool Joints* are in demand the world over

The Brewster COMPANY~INC.
SUCCESSORS TO OIL CITY IRON WORKS INC.
Shreveport, Louisiana

Farish Stresses Proration Need In Statement to Stockholders

HOUSTON.—Net earnings of the Humble Oil & Refining Company for 1928 were $18,924,360.87 as compared with $7,115,124.58 for 1927. A statement to that effect was made by W. S. Farish, president, February 11, date of the annual stockholders' meeting.

At this meeting, which resulted in the re-election of all officers and directors of the company, Mr. Farish's view of the immediate future bordered on pessimism in keeping with the general feeling of major producers at this time. He cited a number of possible hazards in sight provided a general curtailment of crude production and a curbing of refinery output are not effected throughout this year. He gave his company's policy as being strictly in favor of proration, and lauded the work of the Texas Railroad Commission of the past year. He pointed out the addition of 20,000,000 barrels of oil to storage in 1928 in Texas as being indicative of lower prices unless storage runs were checked.

Details of Mr. Farish's statement are quoted as follows:

"The business of this company for the year 1928 has been about as anticipated and about as predicted at the last annual meeting.

"Our profits are better than they were for 1927. As you will recall, in 1927 we showed a net profit of $7,115,124.58. In 1928 we had a net profit of $18,924,360.87. In 1927 this represented about 3½ per cent. on the reasonable value of the company's properties. In 1928 it represented about 6.9 per cent. on property values or about $6.30 per share on our stock. In neither year were earnings what they should be in a business as full of hazards and gambles as is our business.

"We have carried on the business without adding any appreciable quantity of oil to storage. In fact, we had at the end of the year about 300,000 barrels more than we had at the beginning.

"We have made considerable capital investment in all branches of our business, particularly transportation and manufacturing, and necessarily an increased volume of business was had in each department.

"In the producing department we have well underway the development of three oil fields that are of considerable promise, in which fields we think we own or control all of the acreage that will be productive. I refer to Raccoon Bend, Sugarland and Boggy Creek. We have acquired numerous prospective producing areas, which we think, adequately discounted, may be considered oil in reserve for the future.

"We are forced to the conclusion that what prosperity we had as an industry and as a company in the year 1928 was due largely to the conservatism exhibited on the part of the refining branch of our industry in not overproducing their markets. Probably the chief reason for the refiner's attitude and the chief reason the industry maintained the equilibrium it did between supply and consumption was the proration carried on with the help and aid of the Railroad Commission in Texas, which enabled the producers to have some check of flush production. Even so, in the State of Texas there was added 20,000,000 barrels to the oil in storage during the year 1928.

"As we review the conditions and attempt to analyze the prospect for 1929, we are frankly at a loss to weigh accurately the difficulties and intelligently interpret the future. As we view it, no situation could be more complicated than the one we face this year. Frankly, the industry is in a position at will to over-produce crude in practically every important area in the United States; the refining industry is equipped to over-produce gasoline in every important area in the United States. Fuel oil is selling at prices which we think are entirely too low to represent the intrinsic value of the commodity. Oil is being pushed into uneconomic uses in increasing quantities. Therefore, we feel that whatever measure of prosperity comes to the industry, and comes to us, in the year 1929 must come from cooperation to prevent the bringing of unnecessary production on top of the ground and the unnecessary manufacture of quantities of gasoline not needed.

"Your directors will in the future, as in the past, give every possible help and encouragement to every legal means of cooperation with other members of the petroleum industry."

Meetings of Interest to Producers

FEBRUARY 20-21:
American Institute of Mining and Metallurgical Engineers, Petroleum Division, New York.

FEBRUARY 23:
Executive meeting of the National Oil Scouts Association, Texas Hotel, Fort Worth, 2:30 p. m.

FEBRUARY 26:
Natural Gasoline Association of America, Plant Operators Meeting, American Legion Hall, Ranger, Texas.

MARCH 21-22-23:
American Association of Petroleum Geologists, Fort Worth.

APRIL 3-4:
American Petroleum Institute, Division of Development and Production Engineering, Texas-Louisiana-Arkansas Division, Baker Hotel, Dallas.

MAY 6-7-8-9:
American Gas Association, Natural Gas Department, Kansas City.

MAY 20-21-22:
Natural Gasoline Association of America, Mayo Hotel, Tulsa.

Showing of High Gravity Well Encourages Offsets

Coalinga, Calif. — After producing steadily for three months, Milham Exploration Company's discovery well in the Kettleman Hills field is flowing nearly 4000 barrels of 60 gravity oil and 45 million cubic feet of wet gas. Operators who have postponed operations, hoping to judge their drilling by the actions of the discovery well, are marshalling their forces to enter the field on a big scale.

The scarcity of water has made electricity the most sensible power, and many, if not nearly all, of the wells will be drilled with electric motors. Power lines are already strung nearby.

A system of roads is being built, with the several operators joining in a common effort to unite the 25-mile structure. Most of the drilling has been done on the north dome, and naturally this part will be most active in the future.

Standard Oil Company is showing the way, having passed 2850 feet in No. 81, its first well. George F. Getty has passed 1200 feet in Armstrong 1. Both of these wells are near the discovery well. At least 15 wells should be drilling within a month.

Some of the leases made call for depths of 8000 feet, if necessary to obtain production. This drilling clause is unusual and apparently leaves nothing undone to obtain production in this 7100-foot field.

Kern County

Bakersfield, Calif.—The status of important Kern County wildcats has changed little during the past week, aside from greater depths reported in many tests. The Elmer Oil Company has taken over the Midway Northern Oil Company's Brown 1, in the Edison district, and will continue the test from 3775 feet. W. W. Stabler is drilling at 3310 feet in his test in the Comanche Point area, with no important showings logged for more than 400 feet. This well was tested around 2600 feet, but responded with a flow of water and gas. The Buttonwillow district, long a producer of gas, promises to be more active this year than last. Richfield Oil Company's Kerwin 1, Section 21-26-22 is redrilling at 4600 feet, having plugged back from 4760 feet.

Oklahoma--Kansas Field Notes

WARREN BAKER, *Staff Representative, Tulsa, Oklahoma*

Mission Operators Plan Prompt Work When Ban Lifts

TULSA.—Completion of a Misener sand well which takes its place among the larger oil wells of the state, featured Oklahoma development during the past week.

Gypsy Oil Company's Miller 3, SEc NE SE Section 18-8-5, Maud field, encountered the sand at 4026-30 feet, after which the hole was loaded with water to permit the drilling in of the test against a large gas pressure. When the water was swabbed off the well did 715 barrels the first hour, and 827 barrels the second, and later increased to better than 900 barrels hourly.

The flow grew so great that the crew attempting to pinch in the well by using back pressure. This action resulted in sand cutting a valve in the control head, which permitted the flow to go on the ground. At no time did the oil go over the top of the derrick, but flowed to the side. Although a big well, it behaved less spectacularly than many smaller wells have done. So huge was the flow that three score of workmen were unable to throw up earthen dikes across a nearby creek fast enough to keep up with the output. Some estimates of the well state it was doing better than 1000 barrels per hour during this time, but these are generally considered to be high.

The well flowed open for two days during which time more than two-thirds of its recovery came through the crevice on the side of the control head. Before the crew was able to get the well under control there was a noticeable let up in its production due to decreased gas pressure. The first 24 hours under control it gauged 8367 barrels of oil and 37,000,000 feet of gas. There are a number of gas traps erected around the new oiler which are probably making some back pressure against the flow. The next 24 hours it did 6200 barrels.

If the well had continued its flow of better than 900 barrels per hour it would take its place as the second largest well ever drilled in the state, but as it is, the producer's estimated flow of close to 19,000 barrels places it in third place. The largest completion in Oklahoma history is the Sinclair Oil & Gas Company's Hartley test in northern Garber pool, which did approximately 27,000 barrels when drilled in several years ago. The second largest well is the Independent Oil & Gas Company's Youts 1, 19-7-5, St. Louis field, which made 21,000 barrels. The Gypsy well is in the Misener sand and easily outclasses all other Misener sand wells.

The well is not regarded as a great market factor as its production would indicate. Misener sand wells are of the flashy type that soon go off in initial production. This is already occurring to the new producer as shown by its declining production. There have been wells drilled in all directions from the producer. These, while good Misener wells, failed to do any thing like the performance of Miller 3. The new producer is one-half mile northeast from Pure Oil Company's discovery well on the Lindley farm in Section 18-8-5.

Maud field production as a result of its largest well and the aid from several other completions, increased to a new peak of close to 50,000 barrels daily during the week. The recovery was off during the last part of the week.

Pure Oil Company's Wiley 4, NW SW NW Section 8-8-5, north end of the Maud field, came in for 1962 barrels in 12 hours from the Misener sand at 4037-4045 feet.

Maud Extended

The producing area of the Maud pool was carried one location west by Amerada Petroleum Corporation's Ballard 1, SEc SW SE Section 1-8-4. The well flowed 900 barrels, cutting two per cent. from the Misener sand at 4140-50 feet and from the Hunton lime at 4150-53 feet, total depth. The east offset to this well Amerada Petroleum Corporation's Hallum 3, SW SE SE Section 1-8-4, was drilled to 4119 feet in Hunton lime found at 4108 feet and did 745 barrels, cutting 7 per cent. The water later exhausted.

Two new Wilcox sand producers are in the making in the Wilcox sand area of eastern Maud. Barnsdall Corporation's Coker 4, SEc NE SW Section 11-8-5, has 3500 feet of oil in the hole from the Wilcox sand at 4151-57 feet. The same company's Coker 2, one location south of No. 4, has 3800 feet of oil in the hole from the Simpson sand at 4246-68 feet.

T. B. Slick and White Eagle Oil & Refining Company's Villines 1, NWc SE Section 20-8-5, southwest of Maud, has a hole full of water from the second Wilcox sand at 4560-62 feet.

It will be interesting to watch the outcome of the Phillips Petroleum Company's Wallace 1, SW NW SW Section 17-8-5, east offset to the big Gypsy Oil Company well. The Phillips Petroleum Company test is to be drilled deeper. It has the Misener sand from 4014-17 feet and spraying only 10 to 15 barrels per hour.

Deep Producer in Sasakawa Area of Allen Field

Sinclair Oil & Gas Company's Jefferson 1, SE NE SE Section 23-5n-7e, Sasakawa area, southwestern Allen field, is a producer from a deep pay, either the Simpson or Wilcox sand. The well is generally thought to be in the Wilcox sand from 4175-83 feet. It flowed and swabbed 770 barrels the first 19 hours and made as high as 185 barrel per hour. The next 24 hours it did only 847 barrels on the swab.

The new well is a diagonal northwest offset to the T. B. Slick Wyetha 1, Section 24-5n-7e, recently completed with a hole full of water in the Wilcox sand. The good showing found in the Simpson sand by the Slick test resulted in the deepening of the Sinclair-Jefferson hole.

A number of tests are already drilling to the Wilcox horizon in this vicinity. Several are getting under way in the north part of the Allen field, near Sinclair Oil & Gas Company's Amos 2-B, Section 7-5n-8e, discovery Wilcox sand well of the Allen field. The Sasakwa area has a total of 30 locations and operations of which 19 are active. The discovery well is doing 675 barrels daily and making some water.

Mission Wells Drill in This Week

The past week saw an increase in the number of wells on top of the sand in the Mission pool. There are 62 tests below 3700 feet, a large number of which are shut down awaiting the lifting of the restriction on drilling in at one minute past mid-night Friday morning. This field will be the center of attention during this week as final preparations are made to drill in the crop of wells.

Under the present agreement these wells will be prorated to 200 barrels per day each. There is some opposition to this plan that may result in some last minute change. The Mission field as a whole is generally expected to prove disappointing

and far short of the original estimates placed on it.

Tatums Field Extended

Magnolia Petroleum Company's Archard 1, SW NW Section 14-1s-3w, one-half mile north of the Tatum field in Carter County, southern Oklahoma, pumped 38 barrels of oil in 24 hours.

A large number of wildcats are active in the vicinity of this field, which may have some further important bearings on its future exploration program.

Oklahoma City Quiet

There were no important developments in the new Trosper Park area south of Oklahoma City during the week. Good drilling time is being made by most of the tests and they may be completed before anticipated. A number of tests took cores during the past week which showed gas and oil saturation around 4000 feet in several of the holes.

Elwood Edge Wells Have Deeper Chance

Santa Barbara, Calif.—Discovery of the Sespe shale in the Rio Grande-Barnsdall Oil Companies' Elwood Community test in the extreme northern part of the Elwood field lends an encouraging aspect to drilling below the producing zone of the proven area and gives a ray of hope to operators of edge leases who have little chance of finding oil in the regular producing zone. This shale was found around 4700 feet, but drilling was stopped at 4735 to run a string of 6⅝-inch casing in anticipation of a sand below the present formation. Trouble is being experienced in running the casing, the string having stuck below 4500 feet.

The performance of Bell 5, the sixth and best producer completed, gives the field a still greater boost and indicates that a production of 50,000 barrels is not only possible but probable. The well has a settled production of more than 5000 barrels, bringing the field total to 24,000 barrels. Small beans are being used on all wells as a precaution, although no sign of water has been detected.

Petroleum Securities Company has drilled to 4900 feet in Storke 2, an outpost well, but has found nothing more encouraging than brown shale. This wildcat is located about two and three-quarter miles east of the producing wells. James O'Donnell has passed 4720 feet in Campbell 1, with the formation running to shale and sand.

Dallas, Texas.—A committee composed of J. A. Holmes, chairman; J. C. Gordon, T. W. Rhoads and B. L. Moore, appointed to study Winkler County pumping problems, has recently completed a survey of conditions and issued a complete report, which will be presented at the Texas-Louisiana-Arkansas meeting April 3 and 4 of the Division of Development and Production Engineering, American Petroleum Institute. The Winkler County pumping problem will be discussed following the presentation of this report at the spring meeting.

Sedgwick Extension Well Starts Drilling Campaign

TULSA.—Hays & Reynolds' Roll 1, SWc NW NE section 7-26-1e, three-quarters of a mile northeast of the Wright discovery well of the Valley Center field, Sedgwick County, Kansas, and one-half mile southeast of the Mary Jane Oil Company's extension well, came in during the past week for 325 barrels per day from 3374-92 feet. The new extension well is expected to do considerably better on the swab.

The important feature of the new producer, in addition to enlarging the size of the field, is that it is located on a six-acre tract and is surrounded on three sides by other small tracts. This will no doubt cause a large amount of drilling in the immediate area.

The test of Simmons & Canary on the Hoover farm, in SWc SE Section 9-26-1e, three miles east of the Valley Center field, has filled up with water from 3455-64 feet.

Water is making serious inroads on the producers of the Valley Center pool. Seven of the 10 producing wells are making water. Luckily the water is free and settles quickly and easily permits the draining of the crude from the top. So far it has made no great change in the production recovery of any of the wells.

The discovery well continues to do close to 1000 barrels per day. This well has recovered more than 265,000 barrels of crude since it was drilled in on August 8, 1928. Marland Production Company's Goodrich 1, C SW Section 16-25-1e, discovery well of the Goodrich pool, north of Valley Center, is now on the pump and doing about 1250 barrels per day. The well is pumping the water off to keep the hole from getting loaded and is flowing between the tubing and casing.

Barnsdall Corporation's Samuels 1, NE NW Section 24-25-1e, three miles east of the Goodrich, is being placed on the pump. It has made no oil for several days.

Third Well at Marion

The third well in the new pay in the Davis pool of Marion County is being drilled in. It is the Darby Petroleum Company's Nickles 1, NEc SE Section 12-19-2e, offsetting the discovery well. The well has 2400 feet of oil in the hole from the Viola lime at 2814-30 feet.

Shell Petroleum Corporation's Funk 1, NW SW Section 7-19-3e, second deep well, has been deepened to 2817½ feet in the Viola lime, increasing the production to better than 600 barrels per day after it had fallen off to nearly 500 barrels.

Empire Oil & Gas Company's Suderman 1, SE NE Section 12-19-2e, discovery well, is pumping 362 barrels per day, which is better than it was doing a week ago.

New Well in Western Kansas

Davis, Hazlett et al's Wieland 1, NEc Section 1-13s-16w, Ellis County, Western Kansas, was an important strike during the past week. This rank wildcat swabbed 120 barrels in seven hours from the Oswald lime at 3004-14 feet. It is about 15 miles southeast of the Phillips Petroleum Company's Ellis County discovery strike made during the late part of 1928. This well is still swabbing about 250 barrels per day from the Oswald lime.

Phillips Petroleum Company's Brull 1, NWc Section 34-14-17w, found a slight show of oil at 3317 feet and was drilling at 3555 feet at the last report.

Helium Gas in Cowley County

Kentucky Nitrogen & Oxygen Company completed another helium gas well in the Dexter field of Cowley County during the past week. It was Sillman 1, SW NE Section 13-24-6e. Approximately 1,500,000 feet of the inflamable gas was found from 1112-17 feet. The same company's Dodson 5, SW NE Section 24-33-6e, was a failure at 1040 feet.

Amarillo, Texas.—Amarillo Producers & Refiners Corporation recently opened a branch sales and service office at Room 900, 624 South Michigan Boulevard, Chicago, in charge of T. F. Caldwell; as part of a program to increase its outlet in the Middle West market.

The company was organized in 1926, with J. D. Wrather of Amarillo its principal stockholder and general manager; and P. H. Hertzog as his assistant, in charge of sales, traffic and office.

On October 1, 1926, the company began operating a 2500-barrel refinery at Borger, Texas, but that plant was recently closed and will be moved to Del Rio, Texas, where the company is now constructing a 2500-barrel crude oil refinery to be operated on West Texas crude supplied by trunk line of the Mid Kansas Oil & Gas Company. The Del Rio plant will start operating about April 1; fuel oil output will be used by the Southern Pacific railroad. Construction of the Del Rio plant, with other refinery operations, is in charge of John Wrather, son of J. D. Wrather. Since August 1, 1928, the Amarillo Producers & Refiners Corporation has been operating a 2000-barrel capacity refinery at Pyote, Texas, running on Winkler County crude. Capacity of that plant was recently increased to 3000 barrels daily, but only about 2000 barrels daily will be run until spring. Practically all gasoline made at this refinery is shipped by tank cars to the Chicago territory.

The WIRE LINE PROTECTOR

30″ or 36″ Diameter
MANGANESE SHEAVES
54″ or 66″ Sizes

EMSCO *Protected*

ORDINARY GUARDS

Many of the eye injuries are attributed to the metal particles which are thrown off when the wire line rubs against steel

Wire lines are protected against chafing by heavily woven belt facing on guards.

Rounded shoulders prevent block from hanging up or carrying away parts of finger board or derrick.

We have minimized the number of wearing parts which are of ample proportions to withstand the most severe duty. The compactness and symmetry of design has created an assembly of sufficient weight, properly distributed, without bulky proportions.

EMSCO
ROLLER BEARING TRAVELING BLOCK

Write for Bulletin No. 15 for further details

EMSCO — A Complete Line of Better Oil Well Equipment
D+B — A Complete Line of Better Hoisting Equipment

Protected by Steel

EMSCO EQUIPMENT CO.

EMSCO DERRICK & EQUIPMENT COMPANY
LOS ANGELES, CALIF., HOUSTON, TEXAS-DALLAS, TEXAS
U. S. A.
EXPORT OFFICE: 150 BROADWAY
NEW YORK CITY, N. Y.
U. S. A.

EMSCO STEEL EQUIPPED WELLS ARE SAFE

Say you saw it in The OIL WEEKLY

Louisiana-Arkansas Field Notes

Gas Line to St. Louis Causes Spurt in Louisiana Fields

SHREVEPORT, La.—Completion during the last week of a small pumper in the extreme northwest part of the Champagnolle field in a vicinity where nothing but failures had been recorded, has created considerable interest and may cause a resumption of drilling in that portion of the district which had been inactive following the series of failures and the increased activity in the northeast and southeast parts of the area.

Hooser and associates Slade 1 in Section 3-17-14. It is estimated at 10 barrels. It was completed in the Crain sand near the 3300-foot level, its depth approximately 100 feet below Crain sand producers in other parts of the Champagnolle area also gave rise to some speculation as to whether a new sand stratum had been uncovered, but the consensus of opinion was that because of the irregularity of the Crain stratum it doubtless was in that horizon.

Activity in Champagnolle continues on a comparatively low plane with only approximately 20 rigs operating and not a new completion during the week in the northeast extension of the field which has been the scene of the greatest activity in recent months. Only two locations were announced for Champagnolle during the week. One of these, J. R. Burns 1 of the Standard Oil Company of Louisiana is in SW NW Section 31-17-15 and will mark an effort to extend the producing area of Champagnolle field approximately a mile north. The other location there is Oil Well Corporation's Perdue D-1, SW NE Section 9-17-14, on the west side of the field.

Gas Fields Active

Monroe and Richland gas fields are showing a spurt of activity as a result of the starting of a 450-mile gas line from those areas to St. Louis, and launching of several other major gas projects. The Century Carbon Company of Illinois has announced plans for construction of a carbon black plant to cost $500,000 to be located at Crew Lake in the Richland field and of a gasoline extraction plant to cost $100,000 in the same vicinity. Gas for the two plants will be furnished by the Millsaps Realty Company from a tract of 3000 acres. Only a few days before Industrial Gas Company had announced plans for a $300,000 gasoline plant at Alto in Richland Parish.

There have been a total of 31 wells projected for the Monroe and Richland fields since January 1, according to the records of the minerals division of the state conservation commission.

H. L. Hunt, Inc., completed Gregory 4 in Section 10-17-14, Champagnolle, at 3056 flowing 100 barrels through two and one-half-inch tubing. In the same district Pure Oil Company completed W. E. Gregory Estate 1, Section 15-17-14 at 3261 feet in five feet of sand pumping 95 barrels daily. In the old south El Dorado field which has been inactive for months Sam Skar, Trustee, completed Fitzgerald 10 in Section 8-18-15, pumping 10 barrels from 2190 feet. Forty-eight feet of broken formation was encountered at the bottom of the hole. Humble Oil & Refining Company added a 25-barrel pumper in the Nevada County field when it completed J. Haynie 2 at total depth of 1150 feet in two feet of sand.

While Louisiana failed to record an oil producer it added two small gassers, Palmer Corporation's W. H. and C. B. Hodges B-12 in Section 25-16-12, Bossier Parish, Elm Grove district, gauged one million feet at 1878 feet and Natural Gas Products Company's Crossett Lumber Company 22, Section 34-21-4e, Morehouse Parish Monroe field, was completed as a six million foot well at 2203 feet with 965 pounds of rock pressure.

Wildcats

Two interesting wildcats, one in Arkansas and one in Louisiana, were among the five failures recorded during the week. Arkansas Natural Gas Corporation's Tidwell 1 in Section 29-22-11, several miles southwest of production in Sarepta, Webster Parish, after making a slight show of oil at 3111 feet, tested dry and was abandoned at 3462 feet. Southern Lumber Company chalked up another failure in Bradley County, Arkansas, when its southern Lumber Company 2, Section 19-16-9, tested dry and was abandoned at 3217 feet.

Other failures during the week were C. G. Gibbons' B. H. Gibbons 1, Section 15-21-16, Caddo Parish, which tested salt water and was abandoned at 2634 feet, and Simplex Oil Company's Thomas and associates 5, in Section 15-20-15 of the same parish. Both tests are in the Pine Island district.

Randall and associates who several months ago obtained a good show of gas at 690 feet in Urania 1, Section 1-10-1e, LaSalle Parish, Urania district, the hole later being abandoned, encountered a similar result in Urania 2 in the same section, the latter hole being a duster at 640 feet.

Gas Well Locations

Sixteen new wells planned for Monroe and Richland were distributed among Morehouse, Ouachita, Union and Richland Parishes.

In Morehouse Parish, J. S. Harkness announced locations for Bowles 5 and 6 in Section 17-20-5e. Natural Gas Products Company announced location for Crossett Lumber Company 23, Section 26-21-4e, and Ouachita Natural Gas Company made location for Sandidge-Patton 1, Section 15-20-4e.

In Ouachita Parish, Maury Drilling Company made location for McEwen 5, Section 29-19-4e. Peerless Carbon Company made location for Moore 4 in Section 26-20-e; Palmer Corporation made location for Fee 6 in Section 24-19-4e; United Carbon Company will drill two tests, Spade 1 and 2, the former in Section 32-19-4e, and the latter in 36-19-3e; United Oil and Natural Gas Products Company of Georgia, made location for Cole 2 in Section 26-20-4e.

Four tests were projected for Richland Parish. Carbon Gas Company made locations for Roberts 1 and W. T. Sartor 1, both in Section 21-16-6e. The latter well has already been spudded in. M. L. Meredith has location for Kate Humble 1 in Section 35-16-6e and Richland Operating Company has made location for S. R. Hemlar 1 in Section 30-16-7e, a semi-wildcat.

In Union Parish, Industrial Gas Company made location for Cook 1, Section 12-20-3e, and United Carbon Company is already rigging up for Reed Heirs 1 in the same section.

Benedum and Trees are rigging up for a third test in the Frierson wildcat area of DeSoto Parish, Mahoney 1, in Section 22-14-12. This company recently abandoned a well in this district after it had

(Continued on page 78)

North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Developments Lessen Probability Llano and Daugherty Joining

SAN ANGELO, Texas.—Two closely located oil producing areas in northern Winkler County known as the Llano and Daugherty pools are coming into more attention from West Texas operators since development work in the Hendrick field has dropped to a low level. The Llano pool, which is located on the W. F. Scarborough ranch and centering in Section 1, Block C-22, is destined to be the most popular if flush production can be developed, since 37 gravity oil, carrying a small sulphur content, is available from the sandy-lime formation found at the 3000-foot level. The Daugherty pool, which centers on Section 3, Block 74, and about three miles to the southwest, has the earmarks of becoming the most productive of the two, but has gotten a slow start with a development program because of most of the completions having encountered water and b.s. with the oil and heavy gas flow.

Operators in the Daugherty pool have made some headway within the past two weeks in determining the possible trends of production from the discovery lease, although the producing structure at this point is less than three-quarters of a mile in width, as indicated by a dry hole less than a half-mile to the southwest of production and a 5000-barrel sulphur water well in the expected horizon offsetting a small producer to the east. The trend of production to the north and south of the Daugherty 80-acre discovery lease, which is now owned jointly by Atlantic Oil Producing Company and Kessler & Logan Interests, looks favorable. Warner-Quinlan Company of Texas's J. D. Leck 1, located in the southeast corner of the S½ NW Section 3, is credited

The Daugherty and Llano pools, located in northern Winkler Co unty, Texas, are shown above, and late developments have reduced the possibility o f the two being connected

LLANO-DAUGHERTY POOL, WINKLER COUNTY, OPERATIONS

Company—	Elev.	Top Salt	Top Lime	Pay Horizon	Total Depth	Date Comp.	Initial Prod.	Prod. & Remarks
Amerada Pet. Corp.'s								
Daugherty 1	2896		2646	3097-3152	3152	11-30-28	2325	280
Daugherty 2	2891		2654	3110-3120	3120	1-20-29	725	Set cas.
Daugherty 3	2902		2854	....	3107			Drl.
Atlantic-Kessler-Logan's								
Daugherty 1	2883	1980	2687	3159-3164	3167	5- 9-28	4000	255
Daugherty 2	2894		2668	3143-3168	3168	12-24-28	900	200
Empire Gas & Fuel Co.'s								
Daugherty 1	2894	1927	2692	3123-3141	3141	10-17-28	2000	230
Daugherty 2	2889		2690	3140-3202	3202	2- 6-29	1500	200
Daugherty 3	2885		2774	....	3140			Stdz.
Daugherty 1-B	2909		2821	....	3295		Flowing	Sul. water
Gulf Prod. Co.'s								
Scarborough 1	2953	1210	....	....	1742			Drl.
Magnolia Pet. Co.'s								
Scarborough 1	2953	1122	2770	2862-3030	3030	1- 8-29	350	150
Prairie O. & G. Co.'s								
Daugherty 1	2889		2685	3130-3140	3140	2- 4-29	600	360
Daugherty-Leck 1	2886	....	2707	....	3069		70	Mil gas, sd
Scarborough 1								Rig
Shell Pet. Corp.-Danciger O. & R. Co.'s								
Daugherty 1	2897		2684	3120-3135	3135	1-12-29	2000	300
Daugherty 2	2903		2742	3150-3172	3208	1-23-29	150	90
Shell Pet. Corp.'s								
J. D. Leck et al 1								Lcn.
Shell-Llano Oil Co.'s								
Scarborough 1	2943	1115	2953	2992-3347	3347	7-22-27	40	35
Scarborough 2	2943	1120	2960	3108-3304	3304	4-18-28	100	55
Scarborough 3	2939	1280	2958	....	3486	9-12-28		Dry & Abn.
Scarborough 4		1105	....	....	1748			Drilling
Scarborough 5								Rig
Texas Pacific Coal & Oil Co.'s								
Daugherty 1	2881	1460	2892	....	3243	10- 6-28		Dry & Abn.
The California Co. & Cranfill Bros. Oil Co.'s								
M. J. Bashara 1	2985	1100	....	....	3503	12- 9-27		Dry & Abn.
Warner-Quinlan Co.'s								
J. D. Leck et al 1	2901	....	2665	2975-3105	3105	2- 4-29	2160	400
J. D. Leck et al 2								Lcn.

with having gauged 90 barrels of 28 gravity clean oil per hour and an estimated flow of 70 million cubic feet of gas at 3105 feet, while Prairie Oil & Gas Company's Daugherty 1, located in the northeast corner of NW Section 16, was reported last week as flowing 23 barrels of clean oil per hour with an estimated flow of 6,000,000 cubic feet of gas from pay at 3130-40 feet.

The east flank of the Daugherty pool was considered defined within the past week when the Empire Gas & Fuel Company's Daugherty 1-B, located in the southwest corner of the E½ NE Section 3, failed to make a producer after drilling to 3295 feet, with a flow of 5000 barrels of sulphur water daily in the expected pay horizon at 3232 feet. Amerada Petroleum Corporation's Daugherty 3, a south offset to the above failure, was drilling lime at 3107 feet early this week.

The fate of the Daugherty pool as a future source of big production rests on the north and south trends, and the latter trend will be slow in becoming known, since Prairie Oil & Gas Company holds lease on a 320-acre tract in this direction, with plans for a conservative development program. Quicker action will be given the north trend, as the Shell Petroleum Corporation has regained lease on the 80-acre tract adjoining that of the Warner-Quinlan Company to the north, and will drill a test immediately in the southeast corner, thereby creating three offsets, if successful. Development then can be expected to sweep across Shell Petroleum Corporation's lease into Section 5, which is sub-divided into seven parts, and little encouragement in the way of oil production will be necessary to start some of the lease owners in this particular section into a drilling campaign. Structural conditions, heavy gas pressure and similar quality of the oil places the Daugherty area into a comparable class with the Hendrick field, and both are situated on the same "lime high" that cuts across Winkler County into Lea County, New Mexico, where several important oil producing areas are now practically assured.

The sulphur water situation in the oil horizon in the Daugherty pool is believed to be aggravated somewhat by the presence of heavy gas production, or in some cases from casing being cemented too high, or faulty. An outstanding instance of this condition was revealed early this week when the Amerada Petroleum Corporation's Daugherty 2 gauged 626 barrels of clean oil in 13½ hours after drilling plug from cemented string of six-inch casing at 3071 feet. This well was brought in a few weeks ago making 35 barrels of fluid per hour, testing 12 per cent. water, and approximately 60 million feet of gas, after drilling 10 feet of oil pay to a total depth of 3120 feet. The new casing shut off all the water, and reduced the gas volume to 20 million cubic feet.

Cut oil in the Daugherty pool offers little trouble in treating, with a good recovery.

The Llano pool has two small pumpers on the discovery lease, and a 150-barrel flowing well, but heavy gas production is lacking. Magnolia Petroleum Company's Scarborough 1, which widened the pool to the east early this year with an initial flow of 350 barrels daily at 2962-3030 feet, has stimulated development somewhat, while lease owners are also being prodded into starting activity by W. F. Scarborough, the land owner, who has been refusing to accept rental payments in lieu of drilling. This situation has resulted in some of the companies joining in covering the cost of a test removed from production, as is the case with Scarborough 5, which is being drilled on the south line of Section 3 and northeast of production by Shell-Llano Oil Company and others.

An inside location on the south part of the Hendrick field contributed an unusually heavy producer last week when the Prairie Oil & Gas Company's E. W. Cowden 5, located 330 feet west of the center of the east line of W½ SW Section 3, gauged 1310 barrels of clean oil in one hour from regular pay at 2829-2883 feet. Gulf Production Company's Cowden 2, located in the southwest corner of SE Section 3, and about one-half mile southeast of the above producer, has been plugged as a sulphur water well at 3498 feet. This test was drilled with rotary most of the distance, and set a record for the field in the way of a crooked hole, as acid bottle tests revealed it as being 40 degrees off vertical at the 2200-foot level, and at an actual depth of 2980 feet, tests credited it with being at a 27 degree slant and having a vertical depth of only 2666 feet, or a 1173-foot deviation.

Half Interest in Yates 80 Acres Sells for $150,000

Fort Worth, Texas.—W. A. Moncrief, Fort Worth operator, and chairman of the Yates field proration advisory committee, has purchased the Mazda Oil Corporation's one-half interest in an 80-acre producing lease held jointly with the Savoy Oil Company in the Yates field, for a total consideration of $150,000, of which $100,000 is cash and the remainder from oil. This lease has three producers which were credited with a combined potential daily flow of 7004 barrels on February 1, with an allowable production of 660 barrels daily. It is practically surrounded by production, but existing proration rules do not encourage the drilling up of all locations. Savoy Oil Company will operate the property. Moncrief was formerly vice-president in charge of operations in Texas and New Mexico for the Marland Production Company.

Marland Reopens Office At Fort Worth

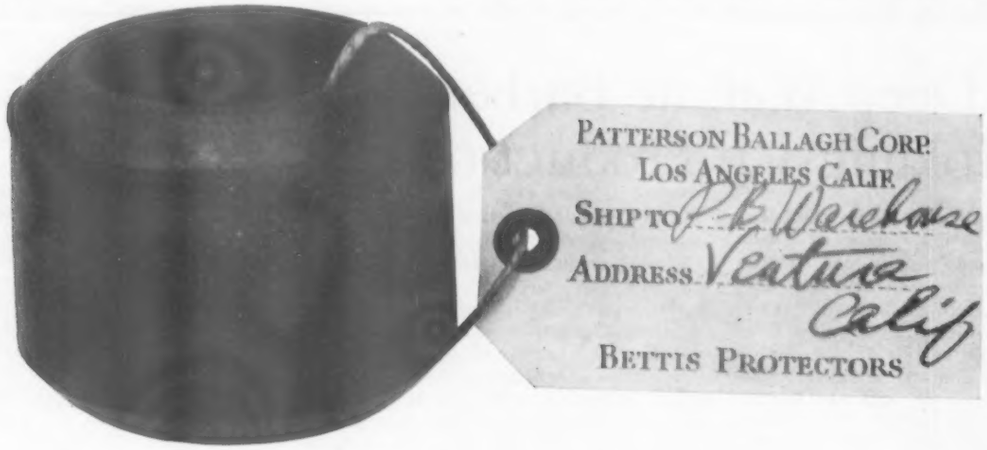
Fort Worth, Texas.—Production headquarters for Texas and New Mexico operations of the Marland Production Company are to be re-established on the 18th floor W. T. Waggoner Building here, according to E. J. Nicklos, Ponca City, Oklahoma, vice-president, George H. McIntyre, formerly production superintendent for Marland Production Company in the Texas Panhandle and more recently in charge of New Mexico operations, will have charge of the Fort Worth office. The removal of the land and geological division now stationed at San Angelo to Fort Worth is also under consideration, thus involving the transfer of D. D. Christner, district chief geologist, and Stacy B. Dorn, manager land and scouting departments from San Angelo.

San Angelo, Texas—Texon Oil and Land Company's University 1-B, Big Lake field, reached a new mark on oil production Monday with a gauge of 1947 barrels of high gravity oil and 18,916,000 cubic feet of gas from the record depth of 8523 feet.

The present gas flow is within 200,000 feet of the peak production.

This well is the deepest in the world, and the increased output is natural.

Another record won!



The 100,000*th* Bettis Protector placed in service

There is no parallel

in the Petroleum Industry to the demand for Bettis Protectors. On the morning of February 2 the 100,000th Protector was shipped. It is now one of the 6153 in service for one of the largest oil companies operating at Ventura, the hardest drilling field in California.

Within the past 12 months Bettis Protectors have been selected for almost 100% of all deep wells drilled. During 1928 71 wells below the 7,000 foot level were drilled; 69 of them were Bettis equipped.

Ask for Catalog

FACTS ARE FACTS

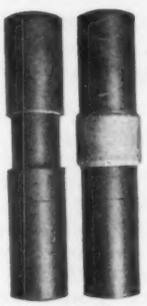
Patterson-Ballagh Corp.

Insurance Exchange Bldg., Los Angeles

Texas and Louisiana Distributors:
Bettis Sales Co., 617 Public National Bank Bldg., Houston

New York Office: 39 Cortlandt St.

Carried in Stock at: Los Angeles, Santa Fe Springs, Ventura, Coalinga, Bakersfield, Long Beach, Tulsa, Wink, Houston, New York City



Hopkins Anti-Friction Tool Joints

Bettis Protectors are now available in Hopkins Anti-Friction Tool Joints and Collars which are sold by manufacturers licensed by us. Fully covered by patents.

"Best bet yet!"

Bettis Protectors - *The genuine anti-friction Rubbers*

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

New Deep Well at Barbers Hill Holding Up Production

HOUSTON. — Early this week Yount-Lee Oil Company's Chambers County Agriculture Association 1, the discovery well of a new deep sand on the southwest flank of Barbers Hill, Chambers County, was still a large well, flowing 4300 barrels of pipe line oil per day on the fourteenth day after its completion January 29. The 4300 barrels of production was through two chokes, one being one-half-inch and the other three-eighths of an inch. Depth of this well is 5315 feet.

In this now prolific part of the field, several new tests have been started. The Yount-Lee Oil Company is already drilling below 1200 feet in its Chambers County Agriculture Association 2, which is 150 feet west of its No. 1, the discovery well. Gulf Production Company is rigging up Fisher 1, offsetting Yount-Lee's No. 2 to the west; and Sun Oil Company is rigging up Chambers County Agriculture Association 1, located on its 50-acre lease just west of the Yount-Lee discovery well. Cedar Bayou Oil Company of Crosby, Texas, is down about 300 feet in its No. 1, on the F. M. Fitzgerald 16-acre tract, C. C. P. Welch survey. To the north of these tests the Yount-Lee Oil Company has a sand and shale with petroleum odor at 2080 feet in Richardson 3.

In the northeast part of the field, where two large wells have been completed in a newly found sand approximately one mile deep, three tests are due to be completed within the next week or so. The latest of the two large producers on that flank of the dome, Humphreys Corporation's Kirby C-1, is flowing an average of about 1340 barrels of pipe line oil per day. It was completed about January 1, this year, and so has been flowing for over six weeks. During the first 26 hours it produced 2460 barrels.

The next test due to be completed in the vicinity of the Humphreys Corporation well is the same company's Cornelia Barber 1, which has an oil sand bottomed at 4949 feet and has set casing at 4881 feet to test that sand. Humphreys Corporation's Kirby B-6 is preparing to set casing over an oil showing sand at 5771-5809 feet. Mills Bennett Production Company's Kirby 2 is drilling hard sand at 5662 feet, with the probability of getting the same which Humphreys Corporation now has around 5800 feet. Other operations in the northeast side of the field include: Mills Bennett and Republic Production Company's J. C. Means 1, drilling shale and lime at 3230 feet; Mike Kouri's Shaw 1, drilling at 1200 feet; and Joe Bashara's Tarbutton 1, total depth 4747 feet; the derrick on this test was pulled in.

Besides the 4300 barrels production of the new Yount-Lee Oil Company well and the 1340 barrels of the Humphreys Corporation's large producer there is additional production at Barbers Hill to raise the total daily output of the field to approximately 6500 barrels. Throughout most of the past year the field's daily yield was around 600 barrels, up to the discovery of the deep sands which are the objective of the present drilling.

All of the Barbers Hill production is being handled by the Liberty Pipe Line Company, which has a six-inch line leading to deep water on Cedar Bayou, a distance of about seven miles; the crude being shipped from that point by barge to the Humble Oil & Refining Company refinery at Baytown on the Houston Ship Channel. The Liberty Pipe Line Company is owned by the Mills Bennett interests.

Start Test Southeast of New Orleans

Houston.—The most easterly location for an oil test so far made in Louisiana was made by The Texas Company the past week in Plaquemine Parish. This is the Garden Island Bay 1, located about 15 miles southeast of Venice, in the peninsula at the mouth of the Mississippi; being on a geophysically discovered dome. It is approximately 75 miles southeast of New Orleans.

This location of The Texas Company is even farther east, as well as farther south, than the recently started test of the Gulf Refining Company on the Spanish Pass dome, Plaquemine Parish. It is approximately 15 miles southeast of that test, Gulf Refining Company's Morris & Rose 1, which is now rigged up.

The exact location of The Texas Company's Garden Island Bay 1, as given in the permit issued by the State of Louisiana, is 3300 feet south and 200 feet west of the northeast corner of Section 107-23s-32e. Gulf Refining Company's Morris & Rose 1 is located in Section 26-21s-30e.

The Texas Company entered the producing business in South Louisiana only a few months ago; its principal properties there consisting of the 10 domes, found by geophysical instruments, acquired from the Louisiana Land & Exploration Company in November, 1928. It now has six locations on new domes in Terrebonne Parish, in addition to the new location in Plaquemine Parish; is driving piling for derrick foundations for one test each at East Hackberry, Cameron Parish, and on the dome in the south part of Calcasieu Lake, Cameron Parish, about 14 miles south of East Hackberry. At Port Barre, a geophysically discovered salt dome prospect in St. Landry Parish, The Texas Company has an oil show in a sandy shale at 3730 feet in Botany Bay Fee 1; and has set 8¼-inch casing at 3700 feet, with the probability of testing the oil showing sand. Botany Bay Fee 1 is 8100 feet south and 3200 feet west of the northeast corner of T 6s, R 5e.

Bayou Bouillon

Houston.—With five pumping wells contributing to the output, the Bayou Bouillon field, St. Martin Parish, now has an average daily production of about 525 barrels. The Rycade Oil Corporation, which operates chiefly in the Gulf Coast, and headquarters of which are in Houston, is the only operator at Bayou Bouillon, and owns most of the acreage around the dome in fee. Rycade Oil Corporation completed the discovery well of the field the latter part of March, 1928.

The wells which are now producing, and their approximate daily yield, are as follows: Atchafalaya Fee 2 making around 260 barrels; State 1 about 100 barrels; State 2 and Bayou Bouillon Fee 2, each approximately 45 barrels, and Bayou Bouillon Fee 4 about 100 barrels.

The Rycade last week made location for one new test at Bayou Bouillon, its Bayou Bouillon Fee 7, at a point 3092 feet north and 3185 feet west of the southeast corner of Section 13-9s-8e. The company's State 3 there is rigging up; Bayou Bouillon Fee 6 is drilling in water sand at 2888 feet; Bayou Bouillon Fee 8 is rigging up; Atchafalaya Fee 3 is drilling sand and shale at 4686 feet; and Atchafalaya Fee 5 is a derrick.

Gulf Starting Two Tests at Fannette

Houston.—Gulf Production Company's Burrell 2, first flowing well at Fannette dome, Jefferson County, is now making around 850 barrels, 10 per cent. fresh water; and the company was rigging up early this week on two new tests offsetting, besides rigging up to deepen Bordages A-6, a former pumping well. The two new tests are Thomas 11, offsetting Burrell 2 on the west, and Bordages A-7 to the south.

Burrell 2 came in January 15, making an estimated 3000 barrels of 34 gravity oil from 12 feet of sand at a total depth

of 5617 feet; later caught on fire; but was again brought under control January 25. It is the eighteenth completed test of the dome, and is furnishing the first really worthwhile production there. The first oil found at Fannette was in Gulf Production Company's Bordages 2, which came in January 20, 1927, making 50 barrels of 28 gravity oil per day, flowing by heads, from 20 feet of sand at 5052 feet, only to go dead two days later, finally being abandoned in heaving shale at 5300 feet. The only other oil producing test before completion of the present large well was Bordages 6, completed in September, 1928, as a 150-barrel pumper at 4760 feet. Bordages 6 is 600 feet northwest of Burrell 2.

Gulf Production Company is the only company operating at Fannette. The dome was outlined in 1925, using seismograph, and a large part of the acreage is held by that company. Fannette is 15 miles southwest of Spindle Top.

Jefferson Davis Parish

Houston. — Vacuum Oil Company's DeVilbiss 1, located a short distance north of Roanoke, Jefferson Davis Parish, Louisiana, is now drilling a water sand at 4624 feet. About three weeks ago this test gave promise of being a commercial producer, making some 23 gravity oil in a sandy shale at 4201 feet total depth; but it would not flow except when agitated by swabbing, and then it made fluid which consisted mostly of water, with less than five per cent. oil.

On this same supposed dome (indications of a dome were found with geophysical instruments), the Vacuum Oil Company, which controls most of the surrounding acreage, is now rigging up Earl 1, the first offset to the DeVilbiss. Earl 1 is located 300 feet north and 300 feet west of the southeast corner of the northeast quarter of section 15-9s-4w.

Texas Starts Line

Houston, Texas. — Official announcement was made by the Texas Pipe Line Company this week that they will immediately begin construction of a 10-inch pipe line from the present pipe line system in the Hendrick field, Winkler County, across the state line into southeastern New Mexico, Jal, New Mexico, to provide an outlet for two small flowing wells owned jointly by The Texas Company, Amerada Petroleum Corporation and Columbian Carbon Corporation on government leases as well as other production which will be available.

San Antonio, Texas.—Mission Drilling Company's Nellie Cummins 1, located one-half mile southeast of production in the Refugio field, has been completed at approximately 3700 feet. It is reported to be flowing at the rate of approximately 1000 barrels of pipe line oil daily.

Grayburg Company Sale Completed

San Antonio.—A three cornered deal whereby Indiana Oil & Gas Company acquires controlling interest in Grayburg Oil Company of San Antonio was concluded in San Antonio at noon Monday, Silas M. Newton becoming president of the Grayburg Oil Company to succeed Dr. F. L. Thompson who will be elected president of the board, a newly created job and treasurer, at a stockholders meeting set for Saturday.

John W. Choates of Oklahoma City will be elected vice president and Arthur J. Devlin of Tulsa will become a member of the executive committee. He is president of American Controlled Oilfields, Inc. Active management of the Grayburg Oil Company will be in charge of Thompson, Choate and Devlin. Mr. Newton's headquarters are in New York City. Indiana Oil and Gas Company was organized in 1928. The Grayburg Oil Company was organized about 12 years ago. Under the new arrangement Grayburg Oil Company receives about 4,000 barrels more production from Yates and North Texas pools. The company now has production in Luling, West Texas and Somerset shallow field. A program of expansion of refining, marketing and development is contemplated.

Salt Flat Production Gets Big Boost

Houston. — Considerably increased production in the Salt Flat field, near Luling, Caldwell County, appears imminent; Humble Oil & Refining Company having completed its Moses & Baggett 1-A in the north part of that pool as the largest well of the field, and extending big production considerably to the northeast. The well came in on Tuesday, February 12, flowing 120 barrels per hour from the Edwards lime at 2660-72 feet, this being at the rate of 3280 barrels per day.

This new Humble Oil & Refining Company well is not quite as far north as the same concern's Johnson 1 and Johnson 2, but it encountered the Edwards lime at about the same depth as in Johnson 2; it was at 2668-80 feet in that well. Johnson 2 is 600 feet west of Johnson 1, and both are small pumpers. When it was brought in January 1, 1928, Johnson 1 extended production about 2½ miles to the northeast, making the field around 4½ miles long. At its widest point, however, it is only about four or five locations wide. Between the Humble Oil & Refining Company wells on the Johnson leases and the former north end of the field, there are now numerous tests drilling.

On several days during the past week the field's total production was around 20,000 barrels, and, according to estimates of the American Petroleum Institute, the average daily production for the week ending February 9 was 19,500 barrels, the highest mark that has been reached since the field was discovered last fall. The preceding week's estimate was 17,550 barrels, and the one before that 15,300 barrels daily.

There are now around 75 producing wells in the field, making a per well average of about 266 barrels daily. During the past week over 30 new locations were made.

Judge Swayne's Death Ends Colorful Career

Houston.—Judge James W. Swayne, a leading operator in Texas' first major producing project and one of the organizers of The Texas Company, died at Austin Monday at the age of 73 years following a protracted illness.

Well known among the old school of producers and organizers in South Texas as having had a colorful career, beginning in the early boom days at Spindle Top, the judge has played no active part in the oil business for many years. At the time of his death he held the chairmanship of the Texas industrial accident board, having been appointed to this position several years ago. Prior to this work he was district judge at Fort Worth for 12 years. At one time he was city attorney at Fort Worth, was county judge of Tarrant County, and under the administration of Governor Hogg was a state senator. He played a prominent part in the creating of the Texas Railroad Commission.

As a prominent part in the development of the early Gulf Coast salt dome fields, he was a joint organizer with Governor Hogg of the Hogg-Swayne Syndicate, a forerunner of The Texas Company.

Houston.—During the past week three new locations were made in the Sugarland field, Fort Bend County, including two by the Gulf Production Company, the first to be made in that field by any company other than the Humble Oil & Refining Company. The field now has a steady daily production of around 7500 barrels from six wells.

Beaumont, Texas.—Sun Oil Company's water shipments from its Gulf Coast crude oil terminals at Sun and Sabine Pass aggregated 525,554 barrels during January, all being coastwise traffic.

Los Angeles.—Richfield Oil Company has passed 4300 feet in its Maywood test, just outside the City of Los Angeles, no showings having been found at any depth.

W. D. Braithwaite and A. E. Holley, London, both officials of the Anglo-Persian Oil Company, were the guests of Captain T. Rieber of New York City, vice president of The Texas Company, early this week on an air tour over Southern fields and refinery districts.

When

MAKER AND USER IT OUT

The Baash-Ross plant about 1921. The original shop, 1919, consisted of one rented building on Ash Street, Brea, employing four men, including proprietors

The top of Signal Hill in 1921, looking toward American Ave. from Cherry Street

Back in 1919

L. F. Baash (above) and H. C. Ross . . . mechanics in the old shop, and still chiefly interested in keeping the shop working closely with the field

SIGNAL HILL ten short years ago . . . and the original Baash-Ross shop at Brea . . . equally striking illustrations of the growth of the oil industry, and of those institutions which adequately serve its growing needs!

Today's 24-hour, "on-the-spot" service, for example, started in that shop. A necessity then, because the shop was small, its equipment limited . . . it took a 24-hour day to turn out its work. The men in from the fields with rush jobs at night, finding the larger plants closed, were often glad to have the small shop down the street do their work.

Regular production stopped; lathes and forge were turned over to the field job. Waiting, field man talked field problems with shop man. Maker and user *together* planned fishing tools, bits, special equipment to fit special requirements. It was natural to bring the next job to the small shop first!

BAASH-ROSS

General Offices and Plant • 5512 Boyle Avenue

DISTRICT OFFICES: Houston, *1816 Nance Street* . . . Tulsa, *International Supply Company and Lucey Products Corp'n.*. . . . New York, *30 Church Street*

Say you saw it in The OIL WEEKLY

Each of the five Baash-Ross branches and field service shops is larger and better equipped than the original plant in 1919. Taft (left), Ventura (right), and Brea (below)

WORK TOGETHER !

Stocks at the Houston Branch mean quick deliveries to Mid-Continent fields in Texas aad Oklahoma (below). Main Los Angeles plant (left)

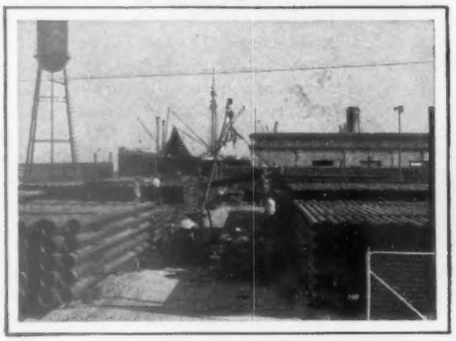
and in 1929

The Long Beach shop in the heart of Signal Hill field. Below: At Wilmington Yards large stocks of J & L Seamless Steel tubular goods are on hand for immediate delivery

So it has gone. New demands from the industry . . . new ingenuity to meet them. And then came "boom" days! Mechanics trained on oil field equipment . . . shops located in the heart of active fields . . . were ready. And a fixed policy of careful workmanship . . . the best materials to be had . . . dealing honestly . . . observed even in "flush" times.

Above all, *maker and user still working together.* Men from the shops making daily and nightly tours of the fields, checking performance, alert to new opportunities, new needs, better methods . . . men from the fields still as welcome, in the modern plant of 64,000 square feet, as in the old shop at Brea. The same day-and-night dependability, the same standards, the same open-mindedness to the other fellow's ideas.

Only one major change . . . enormously greater resources with which to serve, in keeping with the giant strides the industry has taken . . . not in California alone, but in the Mid-Continent and fields throughout the world. And even greater determination, within the organization, to deserve the respect and co-operation of the men in the fields, who have made possible the present growth and continued expansion of the business.



TOOL CO.

Box 1110 Arcade Station, Los Angeles

Field Shops equipped for 24-hour supply and mechanical service at Long Beach . . . Brea . . . Ventura . . . Taft

J&L PIPE B-R

Leaders among 200 Baash-Ross Oil Field Tools:

Hosmer Blowout Preventers . . . H & W Rotary Slips . . . Hi-Deck Crown Blocks and Travelling Blocks . . . Slotted Screen Pipe . . . Forged Steel Fittings . . . Tool Joints . . . Washover Tool Joints . . . Drill Collars . . . Drill Stems . . . Cable Tools of all kinds.

J & L Seamless Steel Tubular Goods

Say you saw it in The OIL WEEKLY

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

Two New Sands Postpone Probable Drop at Santa Fe Springs

LOS ANGELES.—With the positive assurance that the deep zone in the Santa Fe Springs field is more than 300 feet thick and contains oil from top to bottom, a production in excess of that from the Buckbee sand is expected, and a field total of 300,000 barrels daily is possible unless something is done to curtail operations. Picked up at 6305 feet and continuing practically unbroken to 6610 feet, in George F. Getty's No. 19, the new zone has shown all the life that could be expected, and a test of the discovery well is awaited with the greatest interest.

Coming just before the peak of production is reached in the Buckbee zone, the discovery throws an entirely new complexion on the situation at Santa Fe Springs and promises to keep the industry in the throes of over-production for many months to come. While the well has not been tested and there is a possibility that the new sand may yield only a mediocre well, it has not been the habit of new zones in the field to "fall down" and there is no visible reason why the newest formation should fail to perform as the five sands above have done.

The Getty zone was picked up almost exactly 2300 feet below the top of the Meyer zone, which produced such a flood of oil in 1923 and which, until the discovery of the Buckbee zone last summer, was the chief producing formation. The new sand closely resembles the Meyer, although the comparison may not be paralleled by performance. Cores taken at various points between 6305 feet and 6600 feet showed oil and lots of it, indicating that there is no need to worry about the impending production test. Some shale was found between the thicker layers of sand, but the much dreaded gray or water sand failed to make its appearance.

Gas Pressure Satisfactory

Gas pressure, which is the most essential element in producing deep sands, was satisfactory in the Getty well, hematite having been used to prevent a blowout.

The shale body above the Getty sand was almost 100 feet thick, making an ideal condition for cementing the final string of casing. A satisfactory shale body is very essential at such a great depth in order that enough leeway is given for cementing the pipe. With such a thickness little water trouble is anticipated from poor shutoffs. The casing in the Getty will be landed at 6360 feet as a positive assurance that no water will encroach from the top of the shale.

The discovery of a still deeper sand in the Associated Oil Company's Clark 2, a test in the extreme northern part of the field is almost as important as the Getty sand. This new sand, which has been named the Clark zone, was found at 7320 feet and continued unbroken to 7370 feet. With almost 50 feet of sand, the well probably would make a commercial producer as it now stands. Geologists and operators in general are greatly puzzled at the discovery of the Clark zone. Whether it will correspond to the lower layer of the Getty zone, which was found much higher, remains to be seen. The top of the new Clark zone is 2825 feet below the top of the Meyer zone, or 525 feet deeper than the point at which George F. Getty got the Getty zone on his No. 19.

A strange development was the failure of the Associated Oil Company to find any sand at all immediately below the shale under which the Getty well found the new zone. As stated above, it was necessary to continue more than 500 feet to find the Clark zone. This discrepancy indicates that there is a break between the Getty and Clark zones. The Getty well stopped drilling fully 200 feet higher than the point at which the Clark zone was found, leaving the intervening formation a mystery, even if a very important one.

The Associated Oil Company's discovery in Clark 2 is of the greatest importance to wells that have failed to find the Buckbee zone. Located itself far outside the producing limits of the Buckbee zone, the success of Clark 2 should mean certain success for dozens of other wells which lie closer in, but which missed the Buckbee sand. Particularly would this be true in the southwest part of the field.

As further proof that the Clark zone may be entirely separate from the Getty zone, a layer of shale was found just above the former. Incidentally, this body of shale is less than 10 feet thick, promising to give plenty of trouble when attempt to land or stab a string of casing above the sand.

Regardless of whether the sand had contained oil, Associated Oil Company's Clark 2 should have found a zone directly beneath the shale which covered the Getty zone. This failure shows an unconformity which may right itself with further drilling.

Following closely after the discovery of the Clark zone, Richfield Oil Company announced that it had picked up the formation at 7095 in Elliott 2, a well which missed the Buckbee, though it is considerably closer in than the Associated Oil Company's Clark 2. The Clark zone was found at almost exactly the expected level in Elliott 2, but failed to throw additional light on the relation between the Getty and Clark zones. Elliott 2 is about 200 feet higher on the structure than Clark 2, the discovery well. The company is coring at 7175 feet, having already cut 80 feet of oil sand, or fully 30 feet more than was found in Associated Oil Company's Clark 2. The shale body found above the Clark zone in the Richfield Oil Company's Elliott 2 compared favorably with that in Clark 2, not being much thicker. The fact that Elliott 2 contains a thicker body of oil sand indicates that well within the field it will be a major producing zone.

Tests to be Deepened

General Petroleum Corporation, encouraged by the developments in the Associated Oil Company and George F. Getty discovery wells, is pushing Jalk 111 downward with all possible speed. This well is drilling at 6435 feet and should pick up the Getty zone around 6500 feet. Jalk 111 is a very important test and will speak for fully a dozen wells which failed to find the Buckbee far within the the producing limits of the Meyer zone. The well is located in the south central part of the field and failed to produce satisfactorily in the Buckbee zone.

Following closely the discovery of the Getty zone, several operators announced their intention of deepening wells to any zones which come in their way. They are not particular which they find, but having missed production in the Buckbee zone, they are after something with a vengeance. These tests apply chiefly to wells located in the west side, although extreme edge wells in all parts of the field are expected to follow suit. Among the wells now deepening below the Buckbee

Murray
Tool & Supply Company

A N N O U N C E

The opening of the Oklahoma City Branch with a complete stock of oil and gas well supplies. *Located at:*

CAPITAL HILL on the
23rd Street pavement

Distributors of

Regan Equipment.
Ajax Cordage.
Wilson-Snyder Slush Pumps.
Wickwire Spencer Wire Lines
Fairbanks Valves, Dart Unions.
Drilling Tools
Fishing Tools, Supplies.
Pittsburgh Seamless Casing, Line Pipe, Drill Pipe.
Lapweld Casing and Line Pipe.
U. S. Rock Bit Cones and Side Reamers.
Eureka Gas Burners.
Spang Jars.

Murray Tool & Supply COMPANY INC.

General Offices Cleveland, Oklahoma
Tel. 39

Oklahoma Branches: Bowlegs Tel. 28 · Pawhuska Tel. 867 · Ponca City Tel. 2769 · Seminole Tel. 119 · Tulsa Tel. 4-0144 · Webb City Tel. 54 · Weleetka Tel. 121 · Yale Tel. 55 · Maud · *Texas:* Wink

Say you saw it in The OIL WEEKLY

zone are Shell Oil Company's Slusher B-1 and Slusher 15, George F. Getty's No. 18, California Eastern Oil Company's Santa Fe Springs No. 2, Standard Oil Company's Koontz 7 and Santa Fe Oil Company's No. 1.

Anticipating just such a condition, operators were careful to reach the Buckbee zone with large casing, in order that deeper drilling could be accomplished with the least delay. Most of the wells are cemented over the Buckbee zone with eight-inch casing, giving ample room for testing at least one deeper sand. Fully 80 per cent. of the Buckbee zone producers are in a position to be deepened.

The Buckbee zone continued to give a good account of itself during the week, but it was pushed into the background by the newer discoveries. Thirteen completions accounted for a total initial production of 40,200 barrels, or an average of better than 3000 barrels. Some of the best wells of the year were completed, sending production above 190,000 barrels for a new peak. A few of the wells were small, but inside completions showed unusual life.

Despite the steady climb of production, a ray of hope was seen before the discovery of the new deep zones. The field decline was terrific and only through the completion of a flock of wells each week was a gain possible. The Buckbee zone had been fairly well defined, both as to thickness and extent, and a decline was expected after the middle of February.

Deep zone production accounts for 170,000 barrels of the 194,000-barrel total, the shallow producers yielding the remainder. A total of 80 deep wells have been completed, the average production still being slightly greater than 2000 barrels.

Peak production from the Buckbee zone probably will not extend far above 200,000 barrels. Wells in the future should come in with smaller yields, and as more wells are completed the decline will be greater.

Seven Buckbee zone wells died during the week, accounting for a production loss of 10,500 barrels. Wells in this sand have been dying at an alarming rate, due to water and sand encroachment. In many instances the water has been traced to the bottom of the zone.

At least 10 wells per week should be completed in the Buckbee zone during the next month. Sixteen wells are now ready for completion, nearly all of which are destined for the Buckbee zone. The Intermediate zone seems to have lost its attraction for the operators, although it has proven satisfactory near the center of the field.

Bakersfield, Cal.—Leasing of several tracts in the Devil's Den district, in the extreme northwestern part of Kern County, again brings this area into prominence, after two years of comparatively quiet. Many wells have been drilled in the district in an effort to develop deep production. The old field has been producing a few barrels of very heavy oil for many years.

Los Cerritos Extension Gets Good Well

Los Angeles.—The Los Cerritos extension of the Long Beach field again is attracting more than ordinary attention, following completion of a 1500-barrel well by the Al Johnson interests. This latest sensation is located near Thirty-sixth and American Avenues and is near the center of the Los Cerritos district. It is the first large well completed north and west of Wardlow Street. The well was completed at 6581 feet and is flowing 30 gravity oil, with a cut of eight per cent. This well has had an interesting history, having been completed twice in 1926, soon after the boom in the district was over. The original production was 120 barrels, while the yield on the re-completion which followed soon after was 250 barrels. The performance of this well is sure to stimulate activity in the Los Cerritos area.

The Shell Oil Company obtained an unusually good well in Fee 5, which was completed with an initial production of 2500 barrels. This latest producer is located in a well-developed sector and there is no apparent reason why production should have been so high.

Continental Oil Company, one of the most recent entries into the field, scored with a 1300-barrel completion in Dennio 1. It was one of the cleanest wells completed in several weeks, having shown a cut of only one-half of one per cent.

Despite these good completions, production showed a small decrease during the week.

Santa Barbara, Calif.—An oil sand similar to the formation found in the Goleta field has been tapped by the Elwood Consolidated Oil Company, drilling about three miles northeast of the Elwood field and a similar distance southeast of the Goleta field. The sand showed a very light oil but has not been definitely identified. A string of casing will be run and the well tested at 3325 feet.

Rincon Deep Test Fails Near 7000 Feet

Ventura, Calif.—Approaching 7000 feet in Hobson Fee 1, Richfield Oil Company has not encountered another oil zone in its deepest test of the Rincon field. The failure of this well to cut a better sand than was found around 6500 feet in Miley-Hobson 1, the original deep test, practically eliminates the chance of production at any place in the field above 7000 feet. After a series of tests, all of which were unsatisfactory for one reason or another, the company was forced to shut down the Miley-Hobson test at 6532 feet. The well actually produced oil on more than one test, but on one occasion flowed more water than oil, while on another sand rushed in and stopped the flow of oil. For some unaccountable reason, the oil that was obtained scaled much lower in gravity than that produced between 3000 and 4000 feet. There is still a chance for production below 7000 feet, but the initial production of wells carried to such depths would need to be unusually large to offset the cost of drilling.

Through a study of the producing wells, operating companies have checked the field decline to a great extent. Production falls rapidly from the initial, but holds steadier after a few weeks. With a tremendous investment and a production of less than 4000 barrels, the companies are forced to use all ingenuity in an effort to operate the leases at a profit.

Lawndale Becomes Real Active Area

Los Angeles.—A dozen new rigs have sprung up at Lawndale, bringing the number of operations to 70, of which about 40 are drilling wells. The greatest activity is centering near Inglewood Avenue, between Virginia and Wilbur Streets. In mapping the structure, the discovery well has been placed on the southwest side of the field. The townlot district is being drilled extensively, although leases have commanded higher prices and the danger from immediate offsets is apparent. One of the new wells has passed 5000 feet, with two others approaching this depth. There has been difficulty in correlating the logs of these wells, because of the limited amount of drilling in the townsite area.

The field resembles in some respects the Athens-Rosecrans field, which started out with a flash but failed to produce a large amount of oil at any one time. This comparison may be unfair, however, as only additional time will tell.

A production of 50,000 barrels, or more, during 1929 would be felt in California and would do as much harm as twice as much oil ordinarily would do.

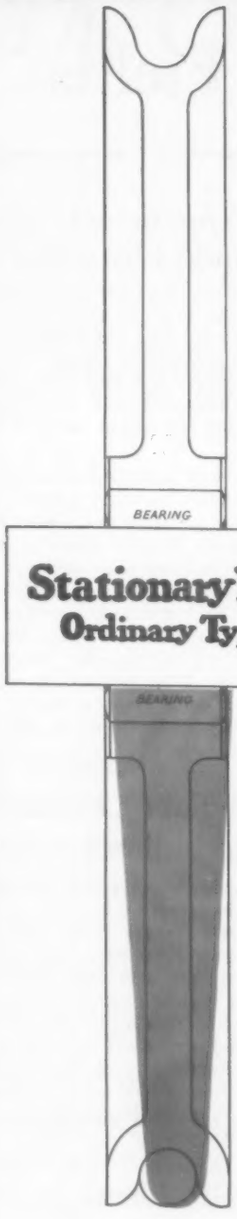
Ventura Well Makes 200 Barrels Only; 7140 Feet

Ventura, Calif.—Ventura's record for big wells suffered a severe jolt, with the completion of the Associated Oil Company's V. L. W. 7, which came in with an initial production of less than 200 barrels from 7140 feet. The well was placed on the pump after showing less life than any well completed on the lease.

Operators are apparently content to complete wells above 7500 feet, not having been particularly impressed with attempts to reach 8000 feet. Even at shallower depths, it is possible to include more than 1000 feet of oil sand and shale. Due to rugged surface conditions and the difference in altitude between wells located only a few hundred yards apart, no favorite level has been found for completing wells. Some of the edge tracts have yielded better producers with less than 1000 feet of sand than many inside wells with a greater amount.

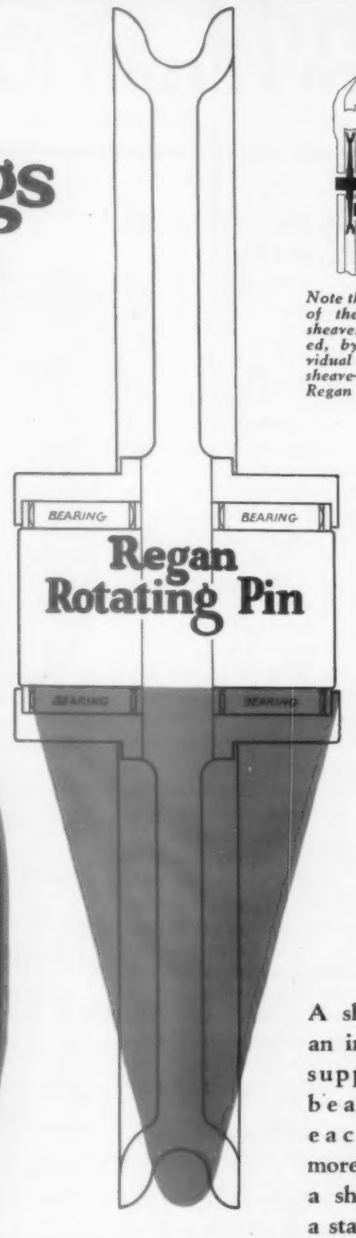
M. K. and T. Oil Company has two wells nearing the oil sand in the southern extension opened up last year by the company, and completion of these tests will throw additional light on this edge tract. The maximum producing lines formerly were thought to be very well drawn, but a 1500-barrel well outside the proven area showed that extensions are possible, even in a supposedly closed structure.

Why the dual bearings in Regan Blocks

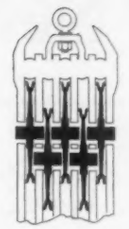


Stationary Pin
Ordinary Type

Fully Patented



Regan Rotating Pin



Note the compactness of the Block. The sheaves are staggered, by use of individual pins for each sheave—an exclusive Regan feature.

A sheave with an integral pin supported by bearings on each side is more rigid than a sheave upon a stationary pin and having but one bearing. In the sheaves used in Regan Crown and Traveling Blocks, the widest bearing surface is offered, preventing "riding the bearing edges;" therefore, destructive strain on bearings is overcome and there is less friction. Wire lines are given longer life. The dual construction permits the use of smaller bearings, allowing higher speed.

Regan
Forge & Engineering Co.
San Pedro California

Main Office Mid-Continent Division:
Dallas, Texas, 1504 Magnolia Bldg.
Pecos, Texas, P. O. Box 444
Oklahoma City, Okla., 2420 W. 21st St.
Pampa, Texas
New York City, 75 West St.
Wm. Braat, Manager
Maracaibo, Venezuela
Wm. Adams, care Amer. Consul

Regan Traveling Block

News From Rocky Mountain Fields

New Geologic Map of New Mexico

Washington—The first large colored geologic map of the entire State of New Mexico ever produced has recently been issued by the Geological Survey. New Mexico's 122,634 square miles present a great variety of geologic formations, topographic features, and mineral resources, and to show these formations the map has been printed in 17 colors, with 22 separate colors and pattern distinctions. It is an important addition to the knowledge of the geology of the United States. The map was prepared by N. H. Darton and sets forth the results of his own mapping, in part reconnaissance and in part detailed, and data from maps by many other geologists. It is printed in two sheets, which when joined measure 52 by 60 inches, and the scale is about eight miles to the inch. The topographic base shows the configuration of the region by 100-meter contour lines.

The geologic formations shown on the New Mexico map represent many portions of geologic time—Cambrian, Silurian, Devonian, and Mississippian in the southern part; Pennsylvania and Permian in wide areas, mostly in the central part; Triassic, Jurassic and Cretaceous in many districts; Tertiary in the San Juan Basin and the Staked Plains; and Quaternary in the valleys especially the broad "bolsons" of the southwestern part of the state. The Tertiary formations include also some igneous rocks, and the Quaternary deposits are extensive accumulations of sand and gravel.

There are some marked general structural features in New Mexico. The eastern third consists of wide areas of plains and gently sloping plateaus, for the rocks are in larger part nearly horizontal. This district includes the Staked Plains, the Canadian Plateau, and the broad slopes adjoining the Pecos Valley. The San Juan Basin occupies a large rolling area in the northeastern part of the state and holds a great thickness of Upper Cretaceous strata, overlain in part by sand and clay of Tertiary age. In the northwestern part of this basin are the oil-bearing domes that are now being explored. Extending from north to south the center of the state nearly to El Paso in a line of interrupted ridges of uplifted older rocks, mostly steeply tilted and exposing in places the granite and other pre-Cambrian rocks. In the southwestern part of the state are ridges of various kinds due to uplifted strata ranging from Cambrian to Cretaceous in age, separated by wide valleys. Volcanic rocks occupy large areas in New Mexico, constituting the high Mount Taylor, Sierra Blanca, and Valle Grande Mountains, rising more than 10,000 feet above sea level. Some recent lava flows are conspicuous in Tularosa Valley, on the east side of Zuni Mountain, and in the northeastern plateau area, where the huge cinder cone of Capulin marks the center of great eruptive activity at a geologically recent date.

The geologic map will be useful to the many geologists investigating the petroleum and other mineral resources of the state and of much interest to persons studying the general or local geology of the region. The map indicates that numerous geologic problems remain in New Mexico, notably in resolving some of the larger units into their components. Some chapters of the geologic history have yet to be worked out, and at many localities the composition of the rocks and the local structure will have to be determined, especially with reference to their economic bearing.

The geologic map of New Mexico may be purchased from the United States Geological Survey, Washington, D. C., for $1.50 a copy, either in two sheets flat for wall use or folding and inserted in a cover about 19 by 26 inches.

Start Pilot Butte Test

* * * * *

Temperature at 40 Below

Casper, Wyo.—A temperature of 40 degrees below zero did not deter the spudding of the Kinney Coastal Oil Company's deep test in the old shallow field at Pilot Butte, Section 22-3n-1w, Fremont County, Wyoming. The hole was started with a 20-inch bit. This well is north of the one drilled in 1926 by the Argo Oil Company, on Section 27-2n-3w, which had a showing of gas and water at 1870 feet, a showing of oil at 2885 feet, and another showing at 2970 feet. At 3203 feet a water sand was entered, the hole filled with water, and the well was abandoned. There has never been a test in this field to the Dakota and Lakota formations, and this well being drilled now by the Kinney-Coastal Oil Company will be the first thorough test of these sands.

Garland Deep Test

Garland, Wyo.—The Utah Southern Oil Company has announced the completion of its deep test on Garland Dome, 26-56-97, in Big Horn County, Wyoming, as a gas well producing 15 million cubic feet. This is the deepest well on the structure, being 3763 feet. This well was tested last week from 3312 to 3763 feet, and produced gas only, although it had been started as a deep test for oil. It penetrates several gas sands, and at times developed small showings of oil.

Tests Announced Near Colorado Discovery

Denver, Colo.—Interest in Colorado operations continue to center around the discovery of the Rozella Oil Company in Pueblo County, southeast of the city of Pueblo. Casing for the well has arrived and is being run into the 600 feet of open hole. A pumping test will be made as soon as possible.

Three wells will be drilled at once by a syndicate known as the Christy-McCormick-Frantz interests, to be located on three sides of the Rozella discovery well. Pueblo Oil & Drilling Company and the Vineland Oil Company have recently been organized to drill wells on acreage recently acquired, the first company having made a location within the corporate limits of Pueblo. It is said that the Continental Oil Company plans a test in the region, but no announcement of this has been made officially.

Marland Takes Lease on Navajo Indian Lands

Farmington, N. M.—Marland Oil Company has purchased an exploratory oil and gas lease on the Navajo Indian reservation on Chimney Rock structure, for a bid of 15 cents per acre cash bonus, in addition to the regular royalty. It was the only bid offered. This lease is southwest of the original lease on Chimney Rock on which a well found a good flow of gas, but no oil. It covers 1440 acres in Townships 30 and 31 north, Range 17 west; it is about 25 miles west of Farmington.

Billy Creek

Casper, Wyo.—An encouraging showing is manifest in a saturated sand encountered on Section 16-48-82 on the east side of the Billy Creek field by the Consolidated Royalty Company, Western Exploration Company, and Carter Oil Company's joint test. The casing is to be run and set on top of a gas sand at 3212 feet, and it is believed that on drilling in there will be a good chance for oil production, long sought in this gas field. The well is farther east on the structure than any well previously drilled, and it was started in order to validate a school section of state land.

Cowley, Wyo.—The S. C. Ferdig interests are to drill a wildcat well on the Glen Wilcock ranch east of here. The rig is being built and the test will get under way immediately. This operation will be of interest to all operators who have been watching developments on structures in northern Wyoming.

The Consumer *is at the* Throttle

WICO quality reflects the high standards of oil field development.

We hear a good deal about inventions these days. Inventions appear almost every day to improve methods and mark new standards for industry everywhere.

But we hear very little about the tremendous stimulus which the country's consumers have provided for inventors, through ever-increasing demand, to maintain a constant improvement of the tools of industry.

If WICO in the past months, has taken great strides forward it is because there is a movement for higher standards, a demand for greater efficiency, throughout the oil fields.

Thus it has been possible to develop and put in your hands the latest models of WICO magnetos, with a self-lubricating feature, making it possible for the WICO user to forget his magneto, months at a time. Again, WICO has filled an urgent need in oil field work by bringing out the completely oil proof, water proof, and dust proof WICO magneto.

The coming year will see still further improvements in WICO magnetos. Your demand for continually improving equipment is appreciated.

Factory Branch, 121 West 8th Street, Tulsa, Okla.

WICO ELECTRIC COMPANY

SPRINGFIELD, MASSACHUSETTS

Say you saw it in The OIL WEEKLY

Setting Strainers in Loose Sand

By HARRY PENNINGTON

(*Continued From Page 22*)

condition; the finer sand and silt is shown to have migrated through the coarser sand to the strainer face, and there, this proportion of the sand has been arrested, filling the pore spaces and creating a relatively non-porous zone surrounding the strainer, which will not pass oil readily through to the strainer.

While this method eliminates sand almost entirely, and will avoid the difficulties in pumping with working barrel, it does not secure maximum production.

Due to the fact that fine sand does migrate to the well, carried through the sand along with the oil, as proven by many tests, it is absolutely necessary to prevent the sand from clogging at the strainer face if we wish to produce all the oil possible, and the only method so far devised of preventing sand clogging, is that of passing the clogging material through and getting it out of the way, which means that it must pass through the strainer and be removed from the well.

The tests that may be made to determine just what has occurred in the well are as follows:

The original oil sand core, taken when the well is drilled, to represent the character of sand throughout its whole drilled depth, should be carefully washed, dried and screened; screens with mashes increasing by .0005-inch opening, instead of .001-inch may be profitably employed, in the finer sands, for more clear results. This sand should be used as a basis after screening into sizes and weighing each fraction. The question of whether volume or weight should be used may be decided by filling a glass tube with the original sand before screening, and ascertaining its volume—using a tube with graduations. Then, after screening the same sand, and then placing each fraction in the tube, beginning with the smallest size, doing so carefully to prevent mixing the sizes, the volume will be found to have materially increased, because the voids in the upper, larger fractions are not filled with the lower, smaller mesh fractions.

Hence, the volume basis is misleading. The weight basis is also somewhat misleading, due to the difference in specific gravity of the finer particles containing shale—shale being lighter than quartz or other chert. But the weight method is more accurate than the volume method; weighing and measuring the volume, both, of the various fractions is profitable information.

Then, when the well is brought in, sand coming in with oil may be washed and dried, and screened as before. If the proportion of fine sand to coarse has increased, and if the coarser is no larger than can be passed through an uncut strainer of the mesh used, we may then be sure that the strainer is functioning properly.

If the sand compares in its various fractions with the original cored, washed and screened sample, in such way that the volumes of each fraction are approximately the same, then we may be sure that the strainer is cut, or that the back pressure valve is leaking, in which event it may be necessary to pull the strainer and re-set another.

If the sand produced with the oil does not measure up in size to what should have passed through, the strainer is evidently too fine, which also requires re-setting.

If the strainer is too coarse, as shown by the size of sand passing through, the whole body of sand will start passing through and never cease, which is also a matter of re-setting.

Usually, in a new field, one or two trials will fix a definite mesh.

Nearly all oil sands are finer at the top of the stratum than at the bottom, or there may be coarser thin strata between finer, which sets up a more complex problem in proportioning strainer.

In this connection, accuracy, or tolerance in opening widths is seen to be of material import; if we are to secure the best strainer results with the methods outlined, the tolerance in strainer openings should be reduced to at least .001 inch either way.

We should also remember that when galvanized wire wound strainer is used, the zinz coating is somewhat softer than the steel core, which may allow it to cut away more readily, and open the meshes by an amount equal to double the zinc thickness.

Steel wire is harder, usually, than bronze wire, and therefore will resist cutting somewhat more, hence, initially, steel wire wound strainer may serve better, while, after pressure has subsided, and a new strainer is to be set, bronze may be used to avoid salt water corrosion.

When strainer is pulled from a well, a core taken before a new strainer is set discloses some good information, as to strainer proportioning. If the strainer has been too fine, the presence of a greater percentage of fines in the new core will indicate such, but if the sand shows an increased percentage of coarser grain, the strainer proportion may have been correct, in which case, a new start may be made in which a still coarser strainer may be used beneficially, and the selective process repeated.

Zone clogging, in many cases, is shown by a failure to increase production upon re-setting strainer, while the same well upon being re-drilled and a strainer set out away from the old hole, showed an increase in production.

In the same way, perforating strainer and setting another inside has, in many cases failed to increase production on account of zone clogging, while re-drilling has improved production.

Tar Balls

In several Gulf Coast fields, producing oil from unconsolidated sands, the oil sand contains small accumulations of heavy tar—small tarry concretions. These range in all sizes and shapes, some round, others oval, others flat. The tar is solid but is plastic.

Sand blown out at West Columbia contains tar balls; Batson produced the same, and the new field, Raccoon Bend, shows tar balls in a sand found at 3250 feet, producing 20 gravity coastal oil.

It is quite conceivable that these tar balls could cause some difficulties in realizing recoveries of oil. If a strainer passes the whole sand, without differential separation, due to being sand cut or gas cut, or to being too coarse, it would be but natural that these tar balls would lodge against the strainer and close the openings, for in several cases, tar balls have been quite plentiful in the sand. When sand is removed, leaving the balls against the strainer, the tar is so heavy and relatively viscous that the strainer opening can be quite readily closed, as indicated by surface trial, pressing one of the balls against the strainer.

Further, it is also quite conceivable that once a strainer is surrounded by tar balls, if the strainer is pulled and another strainer set, the new strainer would go into place with a surrounding of tar balls and its effectiveness somewhat lowered.

So, in re-setting strainer, beyond doubt, a thorough washing of the well to remove a few cubic yards of sand improves production, if tar balls are found to exist.

If clear water is lost in the sand, it may be advisable to use oil for washing, which may be recovered when the well is placed back in production.

Corrosion

The reason for re-setting strainer may be corrosion. Strainer, as made currently, in the wire wound type, is made with low carbon, and consequently, soft wire. It is necessarily soft for the machines that wind the same will not wind hard wire.

In the galvanized wire types, the machines pass the wire through rolls to secure sufficient tension for winding the un-deformed wire type, while the deformed wire type requires rolls to place spacing lugs along the wire. The process of bending, or deformation cracks the galvanizing, exposing the steel through cracks. However, steel exposed to Gulf Coast oil is not damaged, but if the well makes salt water, corrosion is immediately started, and a strainer may corrode so much that an old joint, pulled from a well making oil and water, will require considerable interior pressure to force water through the spacing originally between the wire.

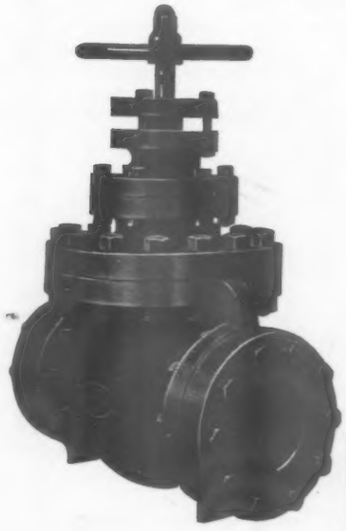
Bronze wire strainer does not resist the action of sulphur compounds in Coast oil, as well as steel, but bronze wire does resist corrosion in the salt waters from

LUDLOW Announces

IRON BODY BRONZE MOUNTED ALL IRON CAST STEEL VALVES

—ALL SIZES AND PRESSURES—

FOR *Refinery Pipe Line Drilling* & *Hand Cylinder Electrical* OPERATED



DISTRIBUTED BY
MID-CONTINENT SUPPLY CO.,
HOUSTON, TEX. FORT WORTH, TEX.
PEDEN IRON & STEEL CO.
SHREVEPORT, LA.
THE LUDLOW VALVE MFG. CO.
TROY, NEW YORK
KANSAS CITY - CHICAGO - BOSTON - PITTSBURG

LUDLOW VALVES

CATALOG ON REQUEST

Say you saw it in The OIL WEEKLY

By PREVENTING EVAPORATION

from reducing the gravity of their contents, the two 3,000 barrel MALONEYS shown above are protecting the price of Dixon Creek Oil Company's Crude at Borger, Texas.

MADE OF KEYSTONE COPPER STEEL

THE MALONEY TANK MFG. CO.
Tulsa, Okla., U. S. A.
Distributors at All Principal Petroleum Points

MADE OF KEYSTONE COPPER STEEL

Sizes: 12 to 10,000 Barrels — Packed in Steel-Bound Crates for Export.

MALONEY

EVERYTHING *for the* OIL WELL

We Are
Headquarters for

American *and*
Monarch
Lathes

Send us your orders or write for prices and complete information.

THE LARGEST SUPPLY HOUSE IN THE SOUTHWEST

PEDEN IRON & STEEL CO.
HOUSTON – SAN ANTONIO – SHREVEPORT

these wells considerably better than steel. Hence, where there is no water, the steel wire strainer must be best adapted, while in wells making water, the bronze wire wound type may serve better. When a well is first made, then, the steel wire strainer may be best, but at the time the well starts making water, from that time on, bronze wire strainer may be better.

Bronze wire is softer than steel wire, hence the steel wire resists cutting more in large producers with high velocity.

Button strainer, of which there are several types, have bronze buttons, slotted to the proper mesh. These are subject to the same things as wire wound strainer.

The wire, of wire wound strainer, buttons of button type strainer, and the steel of the pipe in slotted strainer would all resist cutting better if made harder, for there is no better known method of resisting abrasion than by hardness; in fact, with the exception of high manganese steels—those of the Hadfield type—there is nothing that improves abrasive resistance in steel or bronze as much as hardness.

In many applications, such as the teeth of gears, crusher rolls, Chilean mills, ball mills, pebble mills, roller bits, fish tail bits, disc bits, pipe slips, and others too numerous to mention, wear resistance is secured by hardening either all the way through or by case hardening.

Then, contrary to local opinion, soft metal in strainer wire, buttons or pipe, does not resist cutting as much as hard material.

A girding test is not a measure of hardness, or resistance, for if the emery wheel is not proportioned with correct grit and hardness, it may fill and run smooth; the sand blast, using air under high pressure, and water, or oil, is a far better test of the durability of strainer, and in such tests, the great difference between hard and soft materials may be clearly shown.

Damage in Setting Strainer

Many joints of pulled strainer show damage of one kind or another; broken wires or lost buttons, dislodged wires, and so on, forming the major portion.

Button strainer will withstand spudding somewhat better than wire wound strainer, but when properly set, there is no necessity for spudding any kind of strainer into place.

Setting Strainer

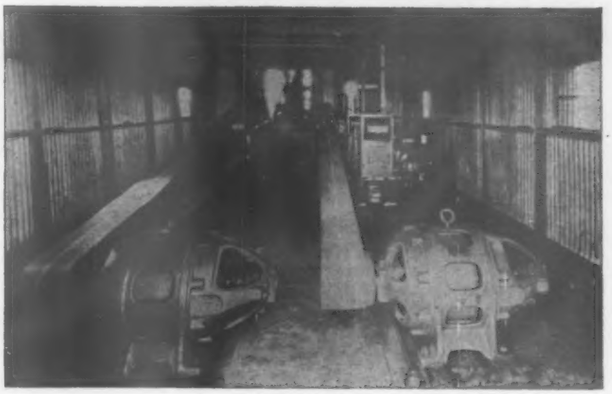
The strainer assembly of today is quite some mechanism; since it is illustrated in several catalogues of manufacturers, the same will not be included here.

It should be said, however, that in using the current assembly and current tools, the weight let down on the packer seal to set the same, is usually much more than needed in deeper wells. Dropping the drill pipe on to the seal is sure to damage the well casing, and in addition, bulged out packer seals are difficult to get out of the hole.

Full String vs. Short Strings

As before noted, where the strainer pipe extends to the surafce, and is there sealed between it and the casing, sand between the strings may prevent pulling the inner

A Safe Bet



-in the Oil Game

THERE is nothing left to chance in the design and application of Westinghouse twin-motor drilling equipment. Broad-gauged engineering has made that certain--engineering that includes intimate contact with operating conditions, and full consideration of the strenuous requirements of oil fields.

Continuous operation is assured--no faltering, no delays--a steady flow of power twenty-four hours a day. Starting, stopping, reversing and close speed adjustment can be instantly controlled from the derrick floor.

Westinghouse service for oil fields extends to wherever operations have started. Whether it is equipment for drilling, pumping, air or gas lifts, rig lighting--or any other phase of oil field activity--Westinghouse is prepared to serve in any electrical capacity.

Further information may be obtained from any office or branch of the Oil Well Supply Company, or the National Supply Companies, or from any Westinghouse district office.

Westinghouse Electric & Manufacturing Company
East Pittsburgh Pennsylvania
Sales Offices in all Principal Cities of the United States and Foreign Countries

Westinghouse

T 30352

string, even though the braden head at the surface is used.

And, where several sands are known or suspected, if the inner string is four or 4½-inch, inside of 6⅝-inch, and cannot be pulled, deeper drilling cannot be done.

But, if a 6⅝-inch strainer is run on the bottom of a string of 6⅝-inch, inside of 10-inch, the well may be deepened, but at considerably more cost for this type of well than for the short string well.

The short string well, with a few joints of blank pipe extending up into the casing, where it is sealed, enables using 6⅝-inch casing, from which the strainer may be pulled if necessary, and the well deepened through 6⅝-inch, just as in the full string 6⅝-inch strainer pipe well, but at less the expense of another string of pipe.

It is not only because the short string method saves casing, that this method has been used in over one hundred thousand wells, but also, that the short string method makes a well from which strainer can be pulled and re-set as many times as necessary during the life of the well, in the same sand, while the full string well from which the strainer cannot be pulled, requires perforating the strainer to set another inside, or re-drilling.

Outside of the Gulf Coast, the short string well is not usually thought to be better than the full string well, but the writer trusts that the foregoing shows why the short string is used to better advantage.

The full string well is shown in Figure 2 with the strainer in place, and with the blank pipe sealed at the top with the surrounding casing. Some operators use a packer of some kind—usually a canvas mother hubbard, above the strainer in the casing.

If the casing leaks, due to drill pipe collars wearing a hole in it, the full string shuts out water, provided the packers hold. But, on the Gulf Coast, very little drilling is done in the casing after it has been set; not more than an hour or so in most wells, to drill into the sand and core, or perhaps to underream in the oil sand. This can do no damage to the casing, and there is no necessity for another string inside to shut out water from above that would come into the well if there was a hole in the casing and a leak.

In full string wells, a left hand thread is placed in the string just above the strainer, so that if the upper portion of the string will not pull out with the strainer attached, it may be backed off, leaving the strainer in the hole, when inside pipe cutters may then be run to cut the strainer into short lengths to enable pulling it out and clearing the well. But, if sand has blown up in between the strings, the upper string cannot be pulled and seldom can circulation be established to clear the sand out.

Wash Pipe

The wash pipe, shown in assembly, is necessary to pass circulation down through the back pressure valve. If no wash pipe is used, circulation will pass through the strainer, instead of down through the back pressure valve. Uusally, the hole down in the oil sand caves, it being loose sand, and when the strainer is run, the loose sand must be jetted to allow the strainer to penetrate it without rotation, for there is a left hand thread in the string on which strainer is run, and right hand rotation will back the strainer off prematurely.

The writer has recently noted several wells set without wash pipe. To place the strainer in position, as we have seen, circulation must pass down through the back pressure valve; without the wash pipe, then, it is first necessary to mud the strainer up thoroughly to prevent circulation passing through it.

We have always tried to prevent mudding strainer; this method obviously is apt to make poor wells in a good sand.

In one well, recently, the strainer without wash pipe would not go into place; it could not be mudded up either. Working it up and down for several hours, dropping it once or twice, accidentally due to the clutch slipping out, this strainer still would not go into place, when it was pulled. The back pressure valve had been driven over 20 feet up inside, up beyond the strainer, and the strainer was filled with tightly packed sand, mud and cement. The strainer was badly damaged, also. It is rather fortunate that the strainer would not go into place, for it is very likely that the sand would have been thought dry, for the well made several hundred barrels of oil when a new strainer was properly set.

In the full string well, with wash pipe, the wash pipe may be fished out after the

B. B. Bros.
ALL STEEL HAND HOIST
TRADE MARK
SEATTLE, U.S.A.

"We would not be without one"

said W. W. Wood, a user,

Weight 110 lbs.

Capacity FIVE TON STRAIGHT LINE

Size 16x17x13" High

Two Speeds 4 to 1 *24 to 1

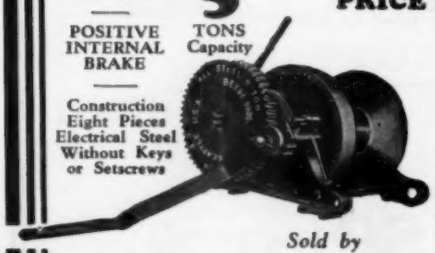
POSITIVE INTERNAL BRAKE

Construction Eight Pieces Electrical Steel Without Keys or Setscrews

Once you use a B. B. Bros. Hand Hoist you will discover that it is so light and powerful as to be indispensable in oil field work. Emergencies are continually arising where this hand hoist meets the situation and saves you time and money.

5 TONS Capacity

PRICE $80



Steel Tail Hold Yoke $4 Extra. Truck Attachment Plate, $10 Extra

Sold by

THE NATIONAL SUPPLY COMPANIES

HOUGH Extension Lower Valve

No leathers to cut out; less cut oil and B.S. More oil with less power.
Ask your dealer.

The Charles N. Hough Manufacturing Co.
FRANKLIN, PENNSYLVANIA

For Strength and Uniformity Use

LEFT to right shows Jim Corbett, tool dresser, T. O. Walters, driller, E. E. Davis, Asst. Supt., and D. Baker of Noble, Olson, Baker Drilling Co. Mr. Baker says Wickwire Spencer Wire Rope gives better service in deep drilling than any other rope he has used. The well is 6,000 feet deep.

WICKWIRE SPENCER STEEL COMPANY
41 East 42nd St., New York City

Wickwire Spencer Sales Corp., 1304 The Philtower, Tulsa, Okla.
T. T. Word Supply Co., Houston, Texas
Murray Tool & Supply Company Tulsa, Okla.
A. F. Keck & Company, Butler, Pa.

WICKWIRE SPENCER UNIFORM WIRE ROPE
tests better than A.P.I. specifications

It Takes Eighteen Months to make A Martin Wagon

The sturdiness and wearability of the **Martin Wagon** is largely due to the careful preparation of the wood.

Selected first from our own sawmill, there is a year or more of seasoning in the open air under scientific stacking conditions; an approximate period of three months in dry sheds; then, with such wagon parts as require it, forty to fifty days in a kiln built particularly for the one purpose.

The final result is a thick piece of oak or hickory, without defect or honeycomb, at the proper moisture content, ready for the paints and oils that will hold it at this correct stage of dryness in any climate in which the wagon may be used.

For seventeen years **Martin Wagons** have been distributed from Florida to Texas, and from Mexico to the Argentine.

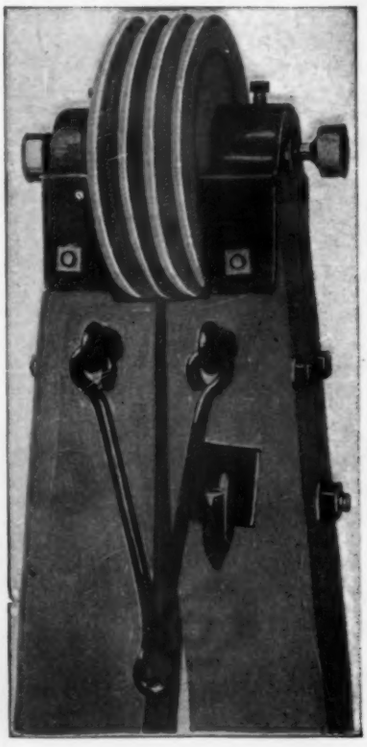
Wagons, carts, trailers, truck bodies, lumber buggies, a Martin Product always gives service.

THE MARTIN WAGON COMPANY
Lufkin, Texas

"Martin Wagons Haul Anything"

SAFETY PULLING MACHINE COMPANY

Wishes to announce that the Safety and Eclipse special Pulling Machines (7x10x36 ft. A-Mast) size will be equipped with Double Crown Pulleys, fitted with 2-15/16 Phosfer Bronze Bushings.



The price to remain the same. Safety $375.00. Eclipse $350.00. F. O. B. Factory.

Either the complete Machine or the Stripped Derrick equipped as above.

For complete description write

SAFETY PULLING MACHINE COMPANY

INDEPENDENCE, KANSAS

P. O. BOX 525

string is set. Fishing it out adds some work and expense, but using the wash pipe insures that as much mud as possible is washed off of the strainer with present methods.

The Packer Seal

The Jennings type seal is somewhat simple in construction. The combination of canvas and lead, when pushed downward over the tapered section, spreads and closes between strainer blank pipe and casing.

The shallow depth of the earlier wells of the Gulf Coast, with shorter strings of drill pipe, furnished ample weight for setting down on the seal and sealing. But today, deep wells, with long strings of drill pipe on top of the seal, require considerable care to prevent setting down and bumping the seal too hard, else the packer bulges the casing, or it may even split the casing.

A case in point. At Pierce Junction, the writer observed a well cored into the 3600-foot oil sand. No water showed in the core. Strainer was set with a string of three-inch drill pipe. After backing off, the full string of three-inch, weighing 36,000 pounds was raised five feet and dropped on the seal. The well promptly started a flow of salt water. There seems to be no question but that the severe bump on the seal did, in this case, split the casing and let water in from above. Other wells drilled afterward nearby to the same sand showed no water initially.

In surface testing of the packer seal, the writer has observed that 50 tons load to seal, bulged the casing until it split. Thirty-six thousand pounds, dropped five feet, sets up more pressure than a dead weight of 50 tons.

Back Pressure Valve

The original back pressure valve was a plain flat disc, with the seat screwed into the strainer shoe. This has given way to various designs more suitable for higher pressures and longer strings of casing.

If a piece of drill hose rubber lining, or a piece of wood off of the slush pit is pumped down and lodges in the back pressure valve so as to hold it open, sand may come in; two back pressure valves are generally used to avoid this.

When running the strainer assembly in the hole on drill pipe, the back pressure valve is closed, which requires filling the pipe at intervals with water, as it goes into the hole, to prevent pressure of fluid from damaging the valve. But, when set on bottom, sand pushes up to the valve, allowing the weight of setting string to rest partly on the valve, hence these valves should be made very strong so as not to be knocked out when the string is set on bottom.

So many things can occur in a high pressure well that will make them sand up, that if the back pressure valve is made so it cannot leak, we may then be sure it is not open, and that sand is not coming in from the bottom.

Current designs of back pressure valves and the material of manufacture are such that they may be easily drilled out if the well is to be deepened through the strainer.

Too much cannot be said and done about thorough washing for it can be safely said that not one joint of strainer has ever been so washed that every lineal inch of opening is cleared of mud. Strainer pulled immediately after setting shows this, and strainer pulled after several years use, also, still shows mud between the spacing designed to let oil through.

The strainer slides down the casing wall and down the open portion of the hole. The open portion of Gulf Coast wells below the shoe is usually composed of gumbo, on top which casing is set and cemented; in many cases, open hole amounts to 200 feet and if the well is anywise out of plumb, we may be sure that the strainer rubs the gumbo wall, and it is not a difficult matter to push gumbo into strainer openings that nothing short of the highest well pressure will dislodge it, even if then.

Various kinds of well washing tools have been designed and used for passing clear water circulation down the back pressure valve, and up through the strainer, either while being set of afterward, or oil may be used. In many cases this is very successful, but in some wells, the strainer is so clogged that circulation through the same can be established only with difficulty after a few months, making it necessary to pull and re-set strainer.

Perhaps there is no washing tool so efficient as the ordinary heavy duty swab, made for the purpose, with the valve arrangement so designed to alternately place pressure below and above the swab as the same is raised and lowered in the strainer.

California

The oil sands of California fields are also loose and unconsolidated, requiring strainer for separating oil. California sands, however, are much coarser than the Gulf Coast sands, and separation is not as difficult—that is, coarse strainer need not be made with the same accuracy as to tolerance as on the Gulf Coast.

Strainer on the Pacific Coast ranges four to 10 times greater in the width of strainer openings, and with the coarser sands, although the porosity is not necessarily greater, the finer sand may be separated with greater ease, and the sand conditioned for free flow toward the strainer, so that initially larger production can be obtained.

In the same manner as on the Gulf Coast, a California sand may be improved in flowing and oil separating qualities by careful proportioning of opening to sand; a strainer with finer openings will arrest finer sand particles at the strainer face and build up a relatively lower porosity zone surrounding the strainer, while a strainer proportioned to pass the finer sand will increase porosity and make larger producers.

The heavy grades of California oil, though, are such that coarser strainer is necessary, more so than on the Gulf Coast, for heavy oil will carry sand wherever it goes with greater ease than lighter oil.

The slotted pipe strainer, with its greater width of opening, finds more extended use therefore, in California while the finer wire wound and button types of strainer find their greatest use in the finer sands of Texas and Louisiana.

AMONG CHAMPIONS

THE Moore Champion DERRICK

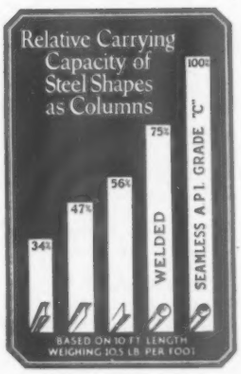
STAMINA

STAMINA is strength that can be depended on; the ability to stand up under punishment and keep on, no matter how hard the going. Stamina is a Champion characteristic.

Moore Champion Derrick leg sections are of 40-50 carbon, seamless steel pipe. This is A. P. I. Grade "C"—the best—and has a minimum yield point of 45,000 pounds per square inch. Strength in the legs—where the greatest loads come—is assured.

Structural steel bracing, patented clamps, heavy base plates, rigid tops and all other parts of the derrick add to the dependable strength of the structure. The Moore Derrick has the real stamina of a Champion.

The Moore Champion Derrick conforms to A.P.I. standards.



Note the superiority of seamless steel pipe for column loading. That's why it is used for Moore Champion Derrick leg sections.

LEE C. MOORE & CO., *Inc.*

PITTSBURGH · TULSA

Established 1907

Dallas, Texas
Houston, Texas
Wichita, Kansas

New York Offices: OILFIELD EQUIPMENT COMPANY
30 CHURCH ST., NEW YORK, N. Y.
Stocks in All Principal Fields

Parkersburg, W. Va.
Casper, Wyo.
Shreveport, La.

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	7	7	5	4	..	2	2	1	240	280
California	19	25	19	23	..	..	..	2	46,175	37,175
Illinois	3	1	1	1	..	..	2	..	80	105
Indiana	3	1	2	1	..	..	1	..	15	30
Kansas	12	6	3	2	1	1	8	3	250	150
Kentucky	25	32	15	20	..	..	10	12	323	321
Louisiana	9	10	2	3	2	..	5	7	565	1,457
Michigan	5	5	2	2	3	..	..	3	600	1,550
Ohio	33	39	14	13	9	14	10	12	517	400
Oklahoma	44	75	21	46	8	8	15	21	12,608	24,805
Pennsylvania	7	5	2	1	5	3	..	1	240	500
Texas	142	136	80	80	5	5	57	51	56,895	75,817
West Virginia	37	20	6	3	25	17	7	..	45	210
Total	347	362	172	199	58	50	117	113	118,553	142,800
Increase this week	..	..	..	..	8	..	4	..	...	...
Decrease this week	15	..	27	..	..	..	..	..	24,247	...

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
WASHINGTON COUNTY—		
Hope Construction & Refg. Co., Robinson 1	235	2900
Southern Oil Co., Hall Heirs 34	5	....
GREENE COUNTY—		
Manufacturers Light & Heat Co., Fonner 1	¶¾	....
Keystone O. & G. Co., Caseman 1	¶¼	....
Peoples Nat. Gas Co., Lemley 1	¶3	....
J. L. Null, Null 1	¶1¼	....
Manufacturers Light & Heat Co., Bumgard 1	¶1	....

WEST VIRGINIA

LINCOLN COUNTY—		
United Fuel Gas Co., Thomas 1	¶½	....
Lewis Hrs. 1	¶¼	....
Thomas 2	¶½	....
Horse Creek, tr 23	¶½	....
Horse Creek, tr 26	¶½	....
Oxley 1	¶½	....
Earl Cameron, Stone 3	¶¾	....
Meabon & Huffman, Plumly 2	¶½	....
G. T. Ray, Vickers 1	¶¼	....
CALHOUN COUNTY—		
United Carbon Co., Davis 2	*	....
L. P. Bickel, Hamilton 1	¶½	....
W. H. Bickel, Burrows 1	*	....
C. B. Lewis & Co., Harris 2	¶1¼	....
Godfrey L. Cabot, Taylor 1	¶2	....
M. F. Crowley, Dawson 2	¶2	....
ROANE COUNTY—		
South Penn Oil Co., Shockley 87	15	....
Shockley 99	10	....
Federal Oil Co., Provident Coal 42	5	....
United Carbon Co., Harold 1	¶1½	....
RITCHIE COUNTY—		
Bachelor & Co., McCullough 1	¶½	..
Hope Nat. Gas Co., Collins 1	10	....
Lincoln O. & G. Co., Swisher 3	2	....
BOONE COUNTY—		
Cameron O. & G. Co., Alderson 11	¶1¼	....
United Fuel Gas Co., Thompson 1	¶1½	....
PUTNAM COUNTY—		
Meabon & Huffman, Courts Hrs. 2	¶¼	....
Kuhn Oil & Gas Co., Hodges 1	*	....
WAYNE COUNTY—		
Chartiers Oil Co., Jackson 1	¶1¼	....
Saunders 1	*	....
JACKSON COUNTY—		
Heck Oil Co., Brown 1	3	....
HARRISON COUNTY—		
J. W. Johnson & Co., Baile 1	¶¼	....
GILMER COUNTY—		
Hope Construction ½ Refg. Co., Ware 1	¶¼	....
LOGAN COUNTY—		
Trojan Oil Co., McKinney 1	¶1½	....
CABELL COUNTY—		
Cummings Bros., Keyser 1	¶1	....
DODDRIDGE COUNTY—		
Clifton Oil Co., Doak 3	*	....

Company, Well and Location	Initial Production Bbls.	Depth
MARION COUNTY—		
J. L. Moore O. & G. Co., Floyd 1	*	....
WETZEL COUNTY—		
Silver Hill Oil Co., Frankhouse 1	*	....
KANAWHA COUNTY—		
United Fuel Gas Co., Birch Branch 2	¶½	....
PLEASANTS COUNTY—		
Southern Oil Co., Barnsdall 1	¶¼	....

KENTUCKY

WAYNE COUNTY—		
Porter, Abbott & Co., Coffey-Oatts 9	*	....
BARREN COUNTY—		
Sampson Oil Co., Browning 16	10	....
HOPKINS COUNTY—		
William Higgins & Co., Unknown 1	*	....
Dexter Pratt & Co., Red Brown 1	*	....
ALLEN COUNTY—		
D. D. Defenbaugh, Beam 3	*	277
Harley & Coatsworth, Welch 2	*	225
W. K. White & Son, Meader 10	25	359
ESTILL COUNTY—		
Superior Oil Corp., West 23	3	....
Griffin 10	2	....
Henderson 29	*	....
Kelley Fulks, Isaac 5	2	....
Adma O. & G. Co., Stewart 15	1	....
DAVIESS COUNTY—		
Smith, Randolph & Co., Wells 6	70	....
Ohio Oil Co., Higdon 1	35	....
The Petroleum Co., Burns 9	25	....
Burns 10	30	....
OHIO COUNTY—		
Wood Oil Co., Inc., Duke 7	40	436
Ralph 5	30	450
Sunnydale O. & G. Co., Smith 1	*	700
James C. Ellis, Keith 10	15	....
Keith 11	*	....
Lyle, French & Co., Whitaker 6 and 7	*	....
Chester Oil Co., Ford 1	5	....
Carpenter & Co., Howard 1	30	....
Cumberland Pet. Co., Hamilton 14	*	....

INDIANA

GIBSON COUNTY—		
Big Four Oil & Gas Co., Sloan 1	10	1885
Washington Oil Synd., Dillon 2	5	1276
GRANT COUNTY—		
Jacob Wides, G. Fergus 1	*	....

ILLINOIS

WABASH COUNTY—		
Adams Corner Oil Co., Stillwell 1	*	1410
Mt. Carmel Oil Co., Leak 8	*	....
LAWRENCE COUNTY—		
Ohio Oil Co., Vandermark 4	80	1650

MICHIGAN

MUSKEGON COUNTY—		
L. C. Kenney & Co., Giles 1	500	2056
Royal Oil Co., Lauenstein 1	100	2068
Bowers Oil Corp., Seiner Estate 2	¶5½	2051
Dixie Oil Co., Dow D-1	¶2½	2058
Dow D-2	¶3½	2054

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
WASHINGTON COUNTY—		
Pure Oil Co., Lee 10	5	....
Logan Gas Co., Jameson 1	¶½	1234
Newhart Drilling Co., Payne 2	1	1756
Thos. McVey & Co., Barnett 12	¶1½	....
MONROE COUNTY—		
Gruber & Myers, Robbins 2	3	1400
Shafer Farm Oil Co., Shafer 3	2	1175
MORGAN COUNTY—		
Penn Construction Co., Hoon 1	¶1	721
Ohio Fuel Gas Co., Remy 1	¶½	1488

CENTRAL OHIO

PERRY COUNTY—		
Pure Oil Co., Baker 2	215	3589
Ohio Fuel Gas Co., Larzeler 1	50	3494
E. Connor & Co., Sunday Creek Coal 18	3	....
HOCKING COUNTY—		
Buckeye Oil & Gas Co., Schaal 1	*	350
Preston Oil Co., Marks 2	35	2803
Logan Gas Co., Harsch 2	*	2653
MUSKINGUM COUNTY—		
Preston Oil Co., Powers 1	¶¼	186 2976
Wm. Kline & Co., Karns-Gossuch 1	*	3640
LICKING COUNTY—		
Preston Oil Co., Mauk 1	5	726
George H. Long, Long 6	3	717
ATHENS COUNTY—		
Logan Gas Co., Barnhill 2	6	1759
Baughman 1	2	1277
HOLMES COUNTY—		
Ohio Fuel Gas Co., Smith 1	2	....
East Ohio Gas Co., Ledbetter 2	*	....
JACKSON COUNTY—		
Ohio Fuel Gas Co., McClure 3	¶1½	2599
House 1	¶¾	2671
GUERNSEY COUNTY—		
Blackstone & Co., Alloway 2	¶1¼	3496
The Kemrow Co., Scott 1	*	810
WAYNE COUNTY—		
Ohio Fuel Gas Co., Landers 2	¶¼	....
SUMMITT COUNTY—		
F. A. Brendall & Co., Hollinger 2	¶2	3936
ASHLAND COUNTY—		
Robinson & Co., Donelson 7	*	....
MEDINA COUNTY—		
Ohio Fuel Gas Co., Redman 1	*	....
MEIGS COUNTY—		
Tyree & Co., Stobart 5	*	602

NORTHWESTERN OHIO

WOOD COUNTY—		
Curtis Jameson & Co., Jameson 1	*	1245
SENECA COUNTY—		
Columbus-Tiffin Oil Co., Soule 1	*	1330

NORTH LOUISIANA

Completions		
BOSSIER PARISH—		
Ark. Nat. Gas Corp., Tidwell 1, 29-22-11	sw	3462
BOSSIER PARISH—		
Palmer Corp., W. H. & C. B. Hodges B-12, 25-16-12	¶1	1878
CADDO PARISH—		
C. G. Gibbins' B. H. Gibbins 1, 15-21-16	sw	2634
Simplex Oil Co., Thomas et al 5, 15-20-15	sw	2248
LASALLE PARISH—		
Randall et al, Urania 2, 1-10-1e	*	640
MOREHOUSE PARISH—		
Nat. Gas Prods. Co., Crossett Lbr. Co. 22, 34-21-4e	¶6	2203

ARKANSAS

NEVADA COUNTY—		
Humble O. & R. Co., J. Haynie 2, 6-14-20	25	1150
BRADLEY COUNTY—		
Ohio Oil Co., Southern Lbr. Co. 2, 1916-9	*	3217
UNION COUNTY—		
H. L. Hunt, Inc., Gregory 4, 10-17-14	100	3056
Pure Oil Co., W. E. Gregory Est. 6, 15-17-14	95	3261
Sam Sklar, Tr., Fitzgerald 10, 8-18-15	10	2190

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CARTER COUNTY—		
E. M. Boring et al, Walker 5, se nw se nw, 10-4s-2w	*	3145
COMANCHE COUNTY—		
Magnolia, Price 5, ne se sw ne, 30-2n-9w	*	2655
CREEK COUNTY—		
Dixie, Tahkaney 5, se sw se, 7-19-9e (twin)	¶2	2099
Baker & Lynch, Grayson 2, csl ne nw, 4-18-12e	¶3	2056
Magnolia, Derrisaw 1, se nw sw, 6-17-7e	15	2875
C. G. Tibbins, Unallotted 2, cel ne nw, 9-14-10e	30	3169
GRADY COUNTY—		
Oklahoma Gas Util. Corp., Sanford 5, ne sw, 23-5n-8w	¶26	2300
KIOWA COUNTY—		
Bridwell et al, Ditmar 1, ne nw nw se, 18-6-16w	25	456
LINCOLN COUNTY—		
Wilcox, Angge 2, sw se sw, 35-14-6e	*	4361
MARSHALL COUNTY—		
Thompson et al, Blaylock 1, sw se sw, 3-6s-6e	*	830
MUSKOGEE COUNTY—		
H. L. Jolly, Durant 1, se sw sw ne, 30-15-15e	*	2121
E. B. George, G. Flowers 1a, cel ne sw, 5-13-16e	*	2001
J. N. Paschall, Alcorn 1, sw ne sw, 18-13-19e	*	980
OKFUSKEE COUNTY—		
Tidal et al, Barnett 1, se ne ne, 30-12-9e	¶15	3975
Josey Oil Co., McCay 18, sw se nw, 33-12-11e	*	3738
OKMULGEE COUNTY—		
J. E. Wallace, Colbert 5 (twin) csl sw ne, 14-14-14e	40	1742
Moffett & Buckles, Grayson 2, cnl nw se, 16-11-12e	¶½	1300
OSAGE COUNTY—		
Carter No. 1, nw sw, 34-26-6e	239	2901
Phillips, No. 17, nw sw se, 21-25-12e	15	1711
Marland and Gypsy No. 2, ne sw nw, 22-24-7e	¶11	2500
Silurian No. 53, se sw ne, 17-23-12e	10	1597
Pioneer Pet. Co. No. 8 "B," sw ne sw, 5-20-11e	30	1744
PAYNE COUNTY—		
Skelly, Kaufman 1, ne se, 6-17-4e	*	4275
PONTOTOC COUNTY—		
Ramsey, Whitney 4, ne se nw, 19-5-8e	550	2628
Dixie, Herman 1, ne se, 1-4n-7e	35	2018
POTTAWATOMIE COUNTY—		
Magnolia, Latimer 1, se sw nw, 17-7-4e	252	4400
Magnolia, Wilbarn 5, se sw se, 24-7-4e	212	4451
Sinclair, Bladin 5, sw nw sw, 24-7-4e	2130	4345
Pure, Thomas 4, csl ne ne, 26-7-4e	4200	4246
Magnolia, Carroll 1, sw nw se, 1-7-5e	*	4905
Sinclair, Bruno 2, csl n½ ne, 26-7-4e	1985	4209
Magnolia, Fyke "E" 1, sw nw, 28-7-5e	73	4395
SEMINOLE COUNTY—		
Magnolia, Varnum 1, se sw se, 32-10-6e	704	4368
Sinclair, Amos "B" 2, (owd) se ne sw, 7-5-8e	1850	4174
W. B. Pine, Walker 1, sw se, 32-8-7e	*	4754
Gypsy, Lena 1, se ne, 10-7-6e	*	4423
Mid-Continent, Eleck 2 (owd) se ne se, 23-7-6e	*	4300
STEPHENS COUNTY—		
Harry Hanbury, Taliafero 8, nw sw sw, 27-1s-8w	50	2200
Ven Mex Oil & Mid-Co., Bush 4, ne nw ne nw, 3-2s-8w	150	1659
American Pipe Line Co., Nigh 3, nw se nw, 34-1s-8w	*	2230
WAGONER COUNTY—		
McCracken, Childers 7, c se ne, 21-18-17e	¶3	828
C. F. Finefield, Vann 5, se nw sw, 22-16-19e	13	894
Public Service, Brown 1, nw sw, 36-16-17e	¶6½	778
Cody & Neely, Rothammer 1, se cor, 7-17-18e	*	800

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Trees Oil Co., McNalley 1, nw ne ne, 11-25-4e	*	2825
O. V. Paul et al, csl se sw, 31-26-6e	*	2804
COWLEY COUNTY—		
Kentucky Gas Co., Sillman 1, ne sw sw ne, 13-34-6e	¶1½	1117
Empire O. & R. Co., Marland Oil Co. and Twin State, Feaster 1, nw ne 36-32-5e	*	3546
ELK COUNTY—		
Wahn et al, Murphy 1, ne nw ne, 27-31-10e	*	1710
ELLIS COUNTY—		
Marland, Vine 1, sw se, 27-11-19w	*	3842
GREENWOOD COUNTY—		
Chris Sheedy et al, Green 9, se sw nw, 11-23-9e	15	2376
Simmons & Rhodes, Luthi 3, ne sw sw, 29-22-13e	175	1713
Syndicate Oil Co. and Phillips, Edwards 2, sw nw ne, 35-23-11e	*	1927
McPHERSON COUNTY—		
Newman et al, Deepenbrock 1, nw ne, 2-17-1w	*	3534
RUSSELL COUNTY—		
Wilcox, Dortland 1, nw cor, 4-14-15w	60	3100
SEDGWICK COUNTY—		
Bu-Vi-Bar et al, Steele, se cor, 1-26-2w	*	3875

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
ELWOOD—		
Barnsdall Oil Co., Bell 5	5600	3373
FRUITVALE—		
Andrew Lucas, Bell 1, 21-29-27	275	4015
LONG BEACH—		
Dabney-Johnston Oil Corp., No. 20.. No. 21	1000	6255
Shell Co., Andrews 8	1000	7000
POSO CREEK—		
Reynolds Oil & Gas Co., No. 1, 6-28-29	800	1575
SANTA FE SPRINGS—		
General Pet. Corp., Santa Fe 177-C	4200	5865
Santa Fe 178-B	5700	5889
No. 209	2900	5881
No. 226	4400	5845
Geo. F. Getty, Inc., Mitchell 23	5800	5880
Graham & Loftus, Santa Fe 1	3400	5900
Shell Co., G. H. N. 16	1600	5795
Standard Oil Co., Walker 15	1500	5782
Union Oil Co., Alexander 10	900	5750
Wilshire Oil Co., Peterson 1-A	4600	5855
General Pet. Corp., Santa Fe 77-A	2500	5288
SEAL BEACH—		
Standard Oil Co., San Gabriel 4	650	4935
VENTURA—		
Associated Oil Co., V. L. W. 1	200	7140

SOUTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
STARKS DOME—		
Gulf, Lutcher-Moore 6	125	4480
LOCKPORT—		
Vacuum-Gulf, Miller 20, dd	440	3615

TEXAS

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BATSON—		
East Batson Oil Co., Stateland 17	5	1000
B. O. Poole, Paraffine 1	10	490
BLUE RIDGE—		
Dudley S. Golding, Overly 1, dd	250	2340
DAMON MOUND—		
Sinclair O. & G. Co., Norton 5	*	4264
GOOSE CREEK—		
Gulf, Paddock-Smith 13	340	3640
HIGH ISLAND—		
Gulf, Geo. E. Smith 6, dd	20	2950
HULL—		
Republic Prod. Co., Dolbear 53, dd	25	2485
ORANGE—		
Brownie-Babbett Oil Co., McLean 5, dd	5	3100
Continental Oil Co., Chesson 14, dd	40	3025
PIERCE JUNCTION—		
Rio Bravo Oil Co., Settegast A-6, dd	*	4700
SOUR LAKE—		
Ebberts, Falloure & Hebert, Hebert 4, dd	55	1890
SOUTH LIBERTY—		
Sun Oil Co., Mitchell 26	590	3500
Mitchell 29	100	1880
Mitchell 31	75	955
Gulf, McLean 5	50	840
McLean 7	300	1040
McLean 8	700	870

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HOWARD COUNTY—		
Amerada Pet. Corp., Roberts 5	1055	2989
W. W. Donnelly-Marland Prod. Co., Clay 1	40	3135
Marland Prod. Co., Chalk 2-C	115	1783
Moody-Superior, Roberts 6-D	60	2675
Plymouth Oil Co., Kloh 1	1200	2297
JONES COUNTY—		
Independent O. & G. Co., Smith 2	*	2554
Smith 3	*	2578
Sinclair O. & G. Co., Bickley 2	*	3008
Snowden & McSweeney, Bickley 6	245	2525
UPTON COUNTY—		
Humble O. & R. Co., Ricker 10	75	2206
WINKLER COUNTY—		
Barnsdall Oil Co., Morton 1	*	3262
Empire G. & F. Co., Daugherty 2	1500	3202
American-Maracaibo Co., Hendrick 1-A	25	3045
Hendrick 1-B	1400	2935
Gulf Prod. Co., E. W. Cowden 2	*	3498
Prairie O. & G. Co., Cowden 5	25,000	2883
Lum Daugherty 1	600	3140
Pure Oil Co., Hendrick 11-C	1050	2734
Shell Pet. Corp., Hendrick 8-F	3500	2641
Southern Crude & Westbrook, Hendrick 6-H-T-88	125	3024
Hendrick 2-I-T-89	1200	3095
Warner-Quinlan Co., J. D. Leck 1	¶70-2400	3105

EAST CENTRAL TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
FREESSTONE COUNTY—		
John W. Hoosier et al, Sessions 1	*	3340

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
H. Donahoo et al, Andrews 4-A	*	900
Ted Harris et al, Roller 2	*	1531
Harry Hines & Phillips Pet. Co., Phillips 2	40	1185
Humble O. & R. Co., Kunkle 1	75	1179
Harold Kelleher et al, King 1	*	1553
E. J. Stump & Co., Ford 1	*	1850
Underwood Drlg. Co., Wilson 3	*	1686
CLAY COUNTY—		
Bain & Clark, Landrum 7	†	195
COOKE COUNTY—		
Richardson Bros. et al, Whaley 1	*	1995
ELECTRA—		
Clark & Dunnaway, Allingham 1	*	2002
Mount & Graham, Burnett 1-B	4	1577
Panhandle Ref. Co., McCarty 7	*	1850
Shappell Oil Co., McCarty 10-A	*	1790
MONTAGUE COUNTY—		
Pure Oil Co., Embry 4	160	1400
K-M-A AND IOWA PARK—		
American Ref. Properties, D. E. Hooks 1	*	690
C. A. Evarts et al, Myers 2	5	1378
Gulf Prod. Co., S. Mitchell 2	35	1321
Magnolia Pet. Co., J. W. Donohue 12	3	1300
Staley-Wynne et al, K. & K. 13	250	1477
THROCKMORTON COUNTY—		
Jones et al, Kunkle 1	*	780
WILBARGER COUNTY—		
Consolidated Oil Co., Waggoner 1-L	20	1373
Fain-McGaha Oil Corp., Waggoner 31-S	90	2422
Waggoner 32-S	350	2450
Waggoner 2-W	140	1860
C. F. Kolp et al, Waggoner 1-G	250	2426
Waggoner 2-G	225	2435
Laalaph Oil Co., Waggoner 1	250	2014
Phillips Pet. Co., Waggoner 2-GG	10	2325
Waggoner Ref. Co., Waggoner 14-H	225	2408
YOUNG COUNTY—		
Allday et al, Orr 1	*	565
Bullington-Lee-Pendleton, Noone 7	20	544
Pennell & Bratcher, Drum 1	*	671
Prairie O. & G. Co., Campbell 6	*	1034
Richards et al, Campbell 2-A	15	897
Riggs & Oliphant, Prideaux 1	*	500
Stevens & Streeter, Vardy 1	*	1000
Underwood Drlg. Co. et al, Campbell 4	7	1030
Walton et al, Prideaux 2	30	465
Williams et al, Bagley 2	*	650
Wooten & Reed, Stewart 1	*	610

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Navajo Oil Co., E. S. Polling 2	58	3570
Skelly Oil Co., H. Schafer 10	200	3237
GRAY COUNTY—		
Southern Pet. Explo. Co., McConnell 2	650	3221
MOORE COUNTY—		
Barnsdall Oil Co., Hagy 1	20	3275

SOUTHWEST TEXAS

CEDAR CREEK—		
Gulf, Yost 1	15	1410
The Texas Co., Yost 1	100	1570
Cranfill & Reynolds, Yost 6	*	2088
Stark 1	*	1790
Sun Oil Co., Yost 1	80	1450
Atlantic, Yost 2	2000	1470
Yost 3	250	1475
SALT FLAT—		
Gulf, Allen 1, 16 ft in Edws. lime	1400	2700
R. W. Carter 1	425	2667
Humble, J. B. Tiller 4	175	2720
J. J. Davis 3	175	2718
Shell, Wm. Moses 2	350	2704
JIM HOGG COUNTY—		
Brooklyn Oil Co., Garza 2, Alworth Pool	*	1060
Randado Oil Corp., Palacios 29	30	1276
Palacios 30	45	1286
WEBB COUNTY—		
Foster-Barnsley, Webster 5, Carolina-Tex pool	60	2622
O. W. Killam, Bruni 33, Albercas pool	*	2225
Magnolia, Yeager-Strohman 13, Albercas pool	*	4942
ZAPATA COUNTY—		
South Texas Prod. Co., Jennings 3, Jennings	¶10	1986
O. W. Killam, R. Lopez 1, Mirando Valley Pool	*	2346
W. R. Duke, Martinez 3, blk 22, Duke subdiv., Charco Rendondo grant	3	996

CENTRAL WEST TEXAS

BROWN COUNTY—		
Alford Oil Co., Leslie 2	¶2	1341
Amerada Pet. Corp., Guthrie 3	*	640
J. H. Green et al, Hill 3	15	848
H. Gutzman et al, Stanley 9	10	438
Humble O. & R. Co., Hickman 29	*	1275
Prairie O. & G. Co., Armstrong 5	*	1476
CALLAHAN COUNTY—		
Grass Roots Oil Co., Klutts 7	35	478
The Texas Co., Hatchett 19	3	368
Weigle et al, Linville 1	*	1508
COLEMAN COUNTY—		
Continental Unit Plan, Overall 11	375	2139
Continental-Atlantic et al, Overall 4	250	2126
Harry Gwinnupp & L. G. Bradstreet, Morris 2	*	2070
Midland Oil Co., Curry 1	*	1385
Roth & Faurot, Glover 1	*	1727
O. H. Shoup et al, Gay 1	*	1503
EASTLAND COUNTY—		
Goodwin et al, Hazard 1	*	1660
Jake Hamon, Jr, et al, Turner 1-B	*	1579
Price et al, Holcomb 2	*	600
T. P. Coal & Oil Co., Higginbotham 3, dd,	¶5-350	3685
SHACKELFORD COUNTY—		
Simms Oil Co., Lones 4	20	800
STEPHENS COUNTY—		
Lacey & Swenson, Harrington 1	*	3414

Sheldon Dome

Casper, Wyo.—The Ohio Oil Company has taken option for the permit owners on the Sheldon Dome, in Fremont County, Wyoming, and will conduct a core drilling campaign as soon as weather conditions permit. Contracts with the land and lease owners are placed in escrow, and it is believed that the company will drill a thorough test of the structure during the coming summer. The last several years have seen three wells drilled on Sheldon Dome. All three showed considerable gas, two of them showed some oil. The structure lies principally in Sections 9-, 10- and 15-5n-2w. If the company exercises its options the contracts require that a well be started not later than June 15, 1929.

Gas Line to St. Louis Causes Spurt in Louisiana Fields

(Continued from page 54)

shown 25 million feet of gas and 100 barrels of salt water at 2631 feet. The two new Webster wells are on the northeast and southeast edges of the Shongaloo gas field. In the former part of the field J. W. Clark, Trustee, is rigging up for Mayfield 2, Section 20-23-9, offsetting a well on the same lease drilled by Bruce Richardson which gave promise at one time of being an oil well around 2700 feet. These tests are between Shongaloo production and the western edge of the Haynesville field.

Besides the two new Champagnolle locations Arkansas will also get another test in Nevada County, location having been made by Wright Oil Company for Groves 4in NW NW Section 1-14-21.

Ohio Oil Company has taken over Bledsoe 1, a wildcat in 20-15-7, Ashley County, drilled to 2554 feet by Rhodes and associates, and is rigging up to resume drilling at that depth. In Ouachita County Shell Petroleum Corporation has gone back into Williams 1 in Section 34-15-15, Smackover district, and is arranging to cement bottom of the hole and perforate casing at the Nacatosh sand. During the week Humble Oil and Refining Company perforated casing from 2240 to 2248 feet in Jones Umstead 2, Section 4-16-15, Union County, Smackover district, and completed the well as a one and a half million foot gasser with 105 pounds rock pressure.

McDonald Brothers who last week set 6⅝-inch casing at 2794 feet in Wilson 1 in 25-18-15, approximately midway between production in the Louann section of Smackover, and the Stephens field, are expected to test this week. Total depth of the hole is 2818 feet. The first hole drilled 40 feet south of this test, which had to be junked and abandoned, obtained an excellent show of oil around 2800 feet.

In Sabine Parish, Louisiana, R. L. Gay, Trustee, who completed a 50-barrel flowing well in Bowman-Hicks 2, Section 14-7-14, 19 miles from nearest production, the well still maintaining its initial flow, bailed dry with no show of oil or gas in eight feet of limey sand in Sabine Lumber Company 1, Section 13-7-14, the first test made since the producer was completed. Gay intends to deepen the hole. He is arranging to set 8¼-inch casing in Bowman-Hicks 2 (new series) in Section 14-7-14, at 1997 feet after coring a broken sand from 1997 to 2006 feet.

Claiborne Parish's two deep tests continue to hold some interest although nothing spectacular developed during the week. Dixie Oil Company is sidetracking drill stem in Gilbert 1, Section 27-21-5w, at 4939 feet, with total depth of 5007 feet. Smitherman and McDonald are coring at 4452 feet in Miller 1, a deep test in Section 17-23-8 in the old Haynesville field. This well tested dry at 4335-4376 feet and at 4402 feet. El Dorado Chief Oil Company which has been shut down at 2092 feet for some time in Baker 1, Section 26-20-7w, is repairing rig for resumption of drilling.

Eastern Capitalists Buy Hendrick Production

Fort Worth, Texas. — Stock control of the Westbrook-Thompson Holding Corporation, discoverer of the Hendrick field, West Texas district, with an undivided one-half interest in the largest production in the field, was acquired February 1 by a group of Eastern capitalists represented by Howard F. Brecht of New York, for $4.30 per share on part cash and deferred payments. Approximately 950,000 shares of stock were delivered by stockholders, who received 50 cents per share cash, with a like amount payable March 1, 1929; $1.00 per share payable February 1, 1930 and $2.00 per share payable February 1, 1931. The latter two payments bear six per cent. interest, but all dividends accumulating in the meantime go to the purchaser.

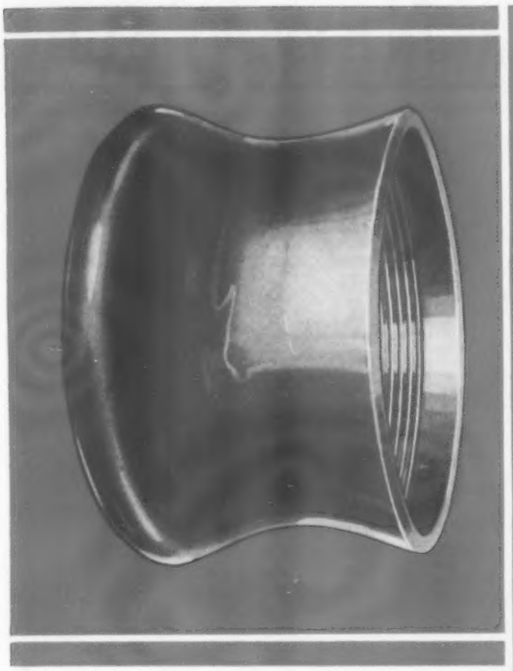
Operating control of the above Hendrick field properties is in the hands of the Southern Crude Oil Purchasing Company, which acquired one-half interest late in 1926 when the field was an unknown quantity. The joint properties on February 1 were credited with a potential daily production, based on brief open flow tests and estimates, of 440,502 barrels from 112 flowing and pumping wells, and during the first half of February allowable production under proration rules is to be a maximum of 36,231 barrels, gross daily.

Four Bear Structure

Cody,Wyo. — Word from the wildcat well on Four Bear structure, NE Section 29-48n-103w, Park County, Wyoming, is interesting. A test of the production was made last week, and the well produced 1000 barrels of oil in three days from a total depth of 3350 feet. Because it had filled all available storage, the well was shut in and is now standing, waiting more storage. The amount of the production was a surprise; it had been estimated that the well would not produce more than 50 or 75 barrels per day. The oil is heavy and black; it tests about 15 degrees. The well belongs to the Honolulu Oil Company of California.

Woodley Elects

Shreveport, La.—J. R. Parten was re-elected president of the Woodley Petroleum Company at the annual election of officers held here recently. Other officers elected were: R. J. O'Brien, and Frank Alberts, the latter of Muskegon, Michigan, vice-presidents; J. R. Pope, secretary; R. H. Deas, treasurer; P. J. Slimer, assistant secretary; and J. C. Oden, assistant treasurer. Directors elected were: J. R. Parten, R. J. O'Brien, G. John Koolker, Holland, Mich.; E. G. Palmer, Frank Alberts, J. R. Pope, Harry Stermfeltz, Detroit; R. H. Deas, L. H. Sherbacow, New York City; H. W. Davenport, El Dorado, Ark.; and J. C. Oden.



THE pipe manufacturer of today is uncompromising in his tests and inspection—he insists on a perfect product—but what is he doing to protect the result of this care and skill?

Colona Thread Protectors, put on at the mill—absolutely protect the threads

PIPE THREAD
COLONA
PROTECTORS
(Patented)

of pipe and couplings—they keep out all dirt and grease—they assure fast, tight joints.

This added service and protection is yours for the asking—why not save cleaning and rethreading time—why not insist on a perfect product?

Colona Manufacturing Co.
Pittsburgh, Pa.

PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountin States:

	Week ending Feb. 9	Prev. ious Week	Total This Month	Total This Year	This Week Last Yr.	This Month 1928	T'tl to Date 1928	1928 Year Total
Arkansas	3	3	6	20	3	6	17	331
California	54	39	93	193	21	50	138	1,207
Louisiana	14	20	34	83	9	19	69	680
Kansas	21	17	38	136	24	40	126	1,032
Oklahoma	62	72	134	405	63	111	310	3,744
Texas	165	233	398	993	132	228	650	8,297
Total	320	384	704	1,831	252	454	1,310	15,291

KANSAS

GREENWOOD COUNTY—D. H. Morgan et al, Hendrickson 1, cel sw nw, 17-25-9e. Simmons and Rhodes, Luthi 4, nw se sw 29-22-13e.

HARVEY COUNTY—Jolly & Ogg Pet. Co., Schowalter 1, ne cor 11-24-1w.

MARION COUNTY—Empire O. & G. Co., Suderman 3, sw se ne 12-19-2e; Suderman 2, ne se ne 12-19-2e. Courtney B. Davis, Rample 2, nw sw nw, 7-19-3e. Shaffer O. & G. Co., Melsher 1, sw nw nw, 7-19-3e. Darby Oil Co., Nickel 2, nw ne se, 12-19-2e.

OSAGE COUNTY—Papoose Oil Co., Evans 1, sw nw nw 34-18-14e.

SEDGEWICK COUNTY—Durham Oil Co., Hodge 1, ne nw se 36-25-1w. Hackett & Van Derman, Kesselr 1, se sw sw ne 36-25-1w. Plains Oil Co., School Lot 1, ne cor, se se 36-25-1w. Richards & Haun, Valley Center 1, sw nw ne se 36-25-1w. Robinson et al, Whitaker 1, se sw ne 36-25-1w. Shaft Held & Youker, Kible 1, ne nw nw se, 36-25-1w. Bu-Vi-Bar Pet. Co. et al, Thad Goodrich 3, se sw sw se 6-26-1e; Byers 1, ne nw sw ne 7-26-1e; Rothfuss 1, nw ne nw ne 7-26-1e; Shawver 1, ne nw 7-26-1e; Shawvey 2, se ne nw 7-26-1e. Producers Oil Co., F. Jones 1, nw se se 31-26-2e.

OKLAHOMA

BECKHAM COUNTY—E. L. Martin, Porch 1, nw cor 27-9n-23w.

CREEK COUNTY—Silurian Oil Co., Starr 27, se nw ne ne 17-18-7e. Wilcox, Harjo 8, sw se sw 35-16-8e.

HUGHES COUNTY—Yarnell Drilling Co., No. 1, sw ne 15-9-10.

JEFFERSON COUNTY—Amerada et al, Majors 1, se nw nw 35-5w-7w.

KAY COUNTY—C. A. Leonard et al, Ballentine 1a, se ne nw 28-27-1e.

KIOWA COUNTY—Muth Bros., Terry 1, c sw se 6-6n-18w.

MUSKOGEE COUNTY—Brader et al, Lovett 1, sw ne 20-15-15e. Flasco et al, Dean 1, sw ne nw (owd) 7-13-18e. Colton & Lester, Parker 1, sw nw sw 25-12-19e.

OKFUSKEE COUNTY—Independent, Jacobs 2, (owd) nw sw ne 22-12-11e. Tidal, Johnson 1, nw sw 29-12-9e. J. J. Schock, Halmes 1a (twin) cel sw ne 29-11-11e.

OKLAHOMA COUNTY—Sooner Development Co., Capshaw 1, se nw 23-11-3w. McKeaver Drilling co. et al, Sampson 1, ne sw 27-11-3w.

OKMULGEE COUNTY—C. V. Prince, S. Adams 7, (twin) se sw ne 12-14-14e. J. E. Wallace, Colbert 12, cnl nw se, 14-14-14e. J. L. Selby, Conner 11 (twin) nw cor 6-14-15e. American Maracaibo Oil Co., Henry 1a, ne nw se 27-12-12e. Moffett et al, Hawkins 6 (owd) c se 6-11-12e.

OSAGE COUNTY—Superior No. 1, nw ne 30-29-8e. Texas No. 1, sw cor 29-28-11e. Minnehoma Oil Co. No. 4, ne sw 11-26-8e. I. T. I. O. No. 1, ne se 26-26-8e. Amerada No. 2, csl sw ne sw 5-24-8e. W. D. Gray et al No. 4, sw se se 34-24-8e; No. 1, cnl ne 3-23-8e. I. T. I. O. No. 1, ne se 26-26-8e. Amerada No. 2, csl sw 5-24-8e. W. D. Gray et al No. 4, sw se se 34-24-8e; No. 1, cnl ne 3-23-8e. I. T. I. O. No. 404, nw ne ne ne 32-23-9e. Carl T. Mathews No. 1 cnl s½ n½ nw 34-23-9e. Mid Kansas No. 4, ne se sw 36-22-8e.

PAWNEE COUNTY—Pure, Loretta 1, nw se 35-20-6e. Magnolia, Embry 1, se nw 26-20-6e.

PAYNE COUNTY—T. J. Hughes, Powers 2, ne sw sw nw 10-18-5e.

PONTOTOC COUNTY—Yarnell Drlg Co. No. 1, c s½ nw 30-4n-6e.

POTTAWATOMIE COUNTY—Amerada & Barnsdall, Wallace 3, se sw 17-8-5e. Amerada, Green 3, ne nw nw 20-8-5e. Tidal, Everetts 2, ne sw sw 18-8-5e. Wilcox, Smith 5, nw ne se 8-8-5e. Texas, Calvin 8, sw nw se 7-8-5e; Calvin 9, nw sw se 7-8-5e. Empire, Smith 1, sw se ne 8-8-5e. Wilcox, Smith 4, se nw se 8-8-5e. Gypsy, LeClair 3 (owd), se sw se 23-7-4e. Sinclair, Blandin 6 (owd), se nw sw 24-7-4e. Gypsy, Roseman 3, sw nw ne 26-7-4e. Shaffer, Tolon 1, (owd), ne se sw 30-7-5e.

SEMINOLE COUNTY—Empire, Cluck 5, se sw ne, 11-8-5e; Cluck 6, ne nw se 11-8-5e. Twin State, Ripley 2, nw se ne 12-8-5e; Ripley 3, ne se ne 12-8-5e. Tidal Nellie 3, se ne se 12-8-5e. Sha¾er, Weaver 2, sw ne ne 12-8-5e; Waver 3, se ne ne 12-8-5e. Sunray, Nitchey 3, nw sw ne 19-5-8e. Carter, Barbee 1, sw cor 4-8-6e; Fuswa 3, ne nw 18-8-6e.

STEPHENS COUNTY—Harris & McNeil, Pettigrew 1, se sw 11-2n-5w. Bunn Marvin Drlg Co., Williamson 2, ne sw se 12-1n-6w. American, Nigh 3, nw se nw 34-1s-8w. Pelwin, King 1, sw se 22-3s-9w.

WAGONER COUNTY—McCracken, Horner 5, ne sw ne sw 21-18-17e. Horner et al, Kidd 2, se nw nw 22-18-17e. Public Service Corp., Verner 1, nw se se ne, 35-16-17e.

CALIFORNIA

BELRIDGE—Union Oil Co., King 8, 30-28-21; King 9, 30-28-21. Berry Oil Co., No. 92, 30-28-21.

KERN RIVER—Pan American Pet. Co., No. 10, 22-28-27. H. H. Bell, No. 2, 6-28-28. Pan American Pet. Co., No. 5, 22-28-27.

LAWNDALE—Hancock Oil Co., Lawndale 1, 1-3-14; Lawndale 2, 21-3-14. Pacific Western Oil Co., Harvey-Smith 1, 21-3-14; Howland 1, 20-3-14; Howland 1, 20-3-14; Howland 2, 20-3-14. George F. Getty, Inc., "L" 2, 21-3-14. St. Helens Pet. Co., Ltd., Smith 1, 21-3-14. Richfield Oil Co., Woods 1, 7-3-14. Western Drilling and Producing Co., C. O. P. 1, 17-3-4; Crowley 1, 21-3-14. Italo Pet. Corp., Fried 1, 16-3-14. The Elmer Co., Elmer 1, 16-3-14. Globe Lease and Royalty Co., Jones 5, 21-3-14. General Pet. Corp., Johnson 1, 17-3-14. Ethyl Oil Co., No. 1, 17-3-14.

KETTLEMAN HILLS—Standard Oil Co., No. 8, 1-22-17. Marland Co., Elliott 2, 12-2-17; Elliott 3, 2-22-17.

LONG BEACH—Shell Dil Co., Brown 2, 29-4-12. Cannon-Jones Oil Co., Hall-Weber 2, 29-4-12.

LOS ANGELES COUNTY—Western Drilling and Producing Co., Carlin-Smith 1, 30-3-14. R. W. Jackson, Florey-Comm. 1, 19-2-11. Petrolee Syn., No. 1, 33-4-12.

MIDWAY—North American Oil Cons., No. 22, 2-32-23; No. 23, 32-31-24; No. 38, 30-31-24. Standard Oil Co., No. 6, 9-32-24.

MT. POSO—Superior Oil Co., Glide 27, 27-27-28. Shell Oil Co., Glide 1, 15-27-28. Signal Oil and Gas Syn., No. 5, 27-27-28.

ORANGE COUNTY—Western Drilling and Prod. Ct., Meyer 1, 18-6-10.

RICHFIELD—Superior Oil Co., Etchandy 3, 33-3-19.

RINCON—C. C. M. O. Co., Hobson B-4, 8-3-24.

ROUND MOUNTAIN—Elbe Oil and Dev. Co., Freeman 3, 20-28-29.

SAN LUIS OBISPO COUNTY—L. W. Bering and Associates, No. 1, 13-32-22.

SANTA FE SPRINGS—Bandini Pet. Co., Off 15, 5-3-11; Off 16, 5-3-11. General Pet Corp., S. F. 230, 5-3-11; S. F. 217, 5-3-11; S. F. L61-B, 5-3-11. Standard Oil Co., S. W. C. 23, 5-3-11; S. W. C. 24, 5-3-11.

SEAL BEACH—Standard Oil Co., San Gabriel 20, 11-5-12.

SUNSET—Union Oil Co., Houchin 4, 10-11-23.

TORRANCE—Petroleum Securities Co., Schwuchow 1, 32-3-14.

VENTURA—Petroleum Securities Co., Hartman 1, 22-3-23. Pacific Western Oil Co., Orton 14, 28-3-23; Willett 6, 28-3-23.

TEXAS

ARCHER COUNTY—Rathke Oil Co., Wichita Falls, Wilson A No. 15, 7 Amer. Trib. sur, 50 ft se of No. 2 Gilliland-Rosser, Wichita Falls, Dupriest 1, 2489 TE&L sur, 150 ft from e and 450 ft from s line. Madden & Hunt, Ilney, Richardson 16, S. Anderson sur, 560 ft from w and 600 ft from s line. C. W. Clark, Wichita Falls, Richardson 1, Meade sur, 150 ft from n and e lines. Nicholson & Laning, Wichita Falls, Hudson 1, J. Saunders sur, 150 ft from e and 450 ft from w line. W. B. Omohundro, Wichita Falls, Rutty 2, J. T. O'Reily sur, 150 ft from n and w lines; No. 3, 300 ft e of No. 1. L. G. Bradstreet Co., Wichita Falls, Snider A 3, R. Wilson sur, 450 from n and 150 ft from w line. Hart & McLaughlin, Wichita Falls, Stone 1, S 2, S. P. Ry sur, 150 ft from n and w lines. Madden & Hunt, Olney, Richardson 15, S. Anderson sur, 750 ft from w and 150 ft from s line. Pandehm Oil Corp., Wichita Falls, Widomeyer 1, J. W. Harris sur, 450 ft from s and e lines. Maycamp Drilling Co., Wichita Falls, Prideaux 4, N. Fraley sur, 1050 ft from n and 683 ft from e line. Texas Co., Wichita Falls, Lorance 1, S 2, EL&R sur, 450 ft from s and w lines.

AUSTIN COUNTY—Humble, Houston, A. Sander 2, W. C. White sur, 766 ft from e and 485 ft from n line.

BROWN COUNTY—Ven Mex Oil Co. of Texas, Hamilton Bldg., Wichita Falls, Hickman A23, No. 783 T. Benson sur, 950 ft from n and 1350 ft from w line. Cranfill & Reynolds, Cisco, Eubanks B 5, R. Mitchell sur, 1658 ft from e and 958 ft from s line. J. H. Green & Co., Inc., Brownwood, Hill 3, S 8, S. P. Walker sur, north central. Love & Michel, Cisco, Graham 1, No. 137 J. Brown sur, 150 ft from e and 450 ft from s line. Mook-Texas Oil Co., Fort Worth, Newton 4, W. B. Travis sur, 500 ft w of No. 3. Geo. W. McClung, Cisco, Spivey 1, No. 32 H&TC sur, 200 ft from e and 600 ft from s line.

BASTROP COUNTY—Texas Co., Houston, Yost 2, A. Garcia sur, 150 ft from s and w lines; 3, same sur, 300 ft e of No. 2. Cranfill & Reynolds, Cisco, Yost 5, Garcia and Cunningham sur, 150 ft from n and e lines; 6, same sur, 600 ft sw of No. 3.

BORDEN COUNTY—C. E. Hyde, Fort Worth, Beal 1, S 14, B 31, twp 3n, 1320 ft from n and e lines.

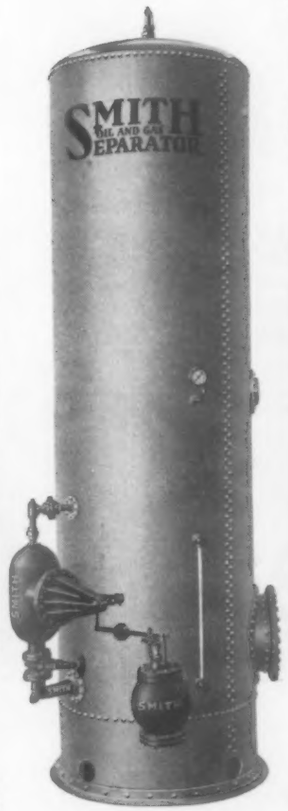
CALLAHAN COUNTY—Mortimer, Hobbs & Ferguson, Cisco, Jones 3, S 40, D & D Asy sur, 300 ft n of No. 2. Texas Co., Fort Worth, Hatchett 18, S 29, D & D Asy sur, 740 ft from e and 150 ft from n line. Reiter-Foster Oil Corp., Tulsa, Okla., Hatchett 31, S 24, D & D

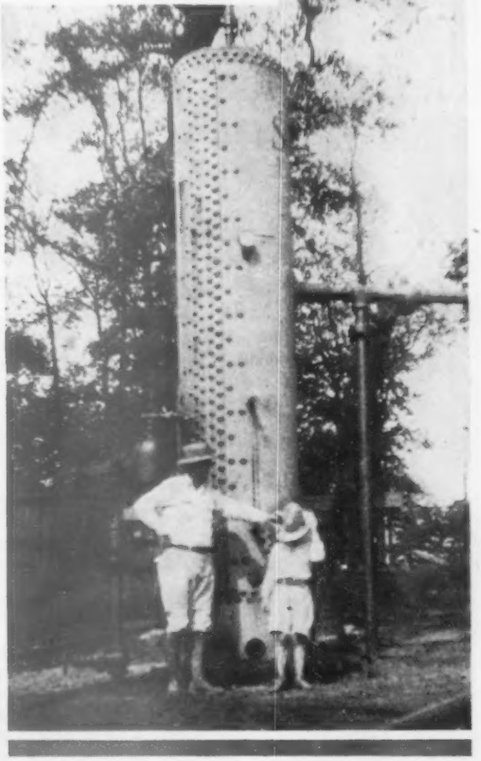
"If it's worth drilling for, it's worth saving"

Smith Separators are built to meet all of the varying conditions encountered in the field. Their conservative rating enables them to safely handle production considerably in excess of rated capacity. "SSCO-STEEL" is used throughout for tank construction, FISCO metal for the fittings. The finished product is a piece of proved equipment that will return greater profits, dollar for dollar, than any other single unit used in the oil country.

Left—Type No. 4 Smith Separator at Garber, Okla., set at the end of gas line which supplies Ponca City, Okla. This separator is used to take out gasoline and oil accumulations in the line.

Right—Type No. 6 High Pressure Smith Separator handling production of a large gas well in the Pine Island Field, near Shreveport, La. Needless to say, this separator handles the unusual strains and stresses of this severe condition with characteristic safety to well and workmen.





"THERE'S A TYPE FOR A SIZE FOR EVERY

EVERY SERVICE AND PRODUCTION NEED"

TYPE NO. 1

SMITH SEPARATOR COMPANY

Tulsa Okla.

Export Office: 30 Church St., New York

HOUSTON FORT WORTH SHREVEPORT LOS ANGELES

Say you saw it in The OIL WEEKLY

United States Torpedo Company

Manufacturers of

NITRO GLYCERINE and DYNAMITE

Main Office: Electra, Texas. Phones Nos. 584 and L. D. 46

TEXAS STATIONS

Electra . .....Phone No. 584
Phone L. D. 46

Burkburnett—
Glen Buckner .....Phone No. 14

Ranger—
J. A. Rapp .....Phone No. 382

Breckenridge—
W. H. Blair .....Phone No. 68

Brownwood—
E. O. Nentwig .....Phone No. 876

Wink, Texas—
H. L. Rapp and
J. W. Dailey .....Phone No. 72

McCamey—
C. C. Rupert .....Phone No. 63

Amarillo—
Tex Thornton ..Phones Nos. 4730-21512

Borger—
W. C. Brooks .....Phone No. 49

Olney—
F. W. Ziegler..Phones Nos. 20 and 237

OKLAHOMA STATIONS

Healdton—
E. H. Simons .....Phone No. 191

Duncan—
M. E. Hannon.....Phone No. 715

All Pioneer Oil Well Shooters

BUY OR RENT USED PIPE

and Save the Difference

15,000′—5-3/16″ Casing
10,000′— 6⅝″ Casing
5,000′— 8¼″ Casing
5,000′—10″ Casing
1,000′—12½″ Casing
1,000′—15½″ Casing

50,000′—2″ Line Pipe
50,000′—3″ Line Pipe
20,000′—4″ Line Pipe
15,000′—6″ Line Pipe
5,000′—8″ Line Pipe

We will rent this casing or any other pipe which you may need. Let us finance your operations by carrying your pipe and casing investment for you.

BRANCH STORES
Wichita Falls, Holliday, Vernon, Breckenridge, Pampa, Tex.

EASTERN HEADQUARTERS
Butler, Penna.

Keystone Pipe & Supply Co.

HOLMES BUILDING
FORT WORTH, TEXAS

BRANCH OFFICES:
NEW YORK, N. Y.
ROOM 525, 165 BROADWAY
LOS ANGELES, CALIF., 420 E. THIRD ST.
CHICAGO, ILL.
1615 FIRST NATIONAL BANK BLDG.
DALLAS, TEXAS

THE AMERICAN WELL WORKS

General Offices AURORA, ILLINOIS *and Factory*

Asy sur, 300 ft from s and e lines. Hadley & Sample, Putnam, Harpe 1, S 66, Bayland Asy sur, 250 ft from e and 1200 ft from s line. Surf Oil Co., Baird, Snyder 21, S 4, T N & sur, 300 ft nw of No. 17. R. N. Webb et al, Cisco, Harris 1, S 39, D & D Asy sur, 500 ft from w and 150 ft from s line.

CALDWELL COUNTY—Humble, Houston, Allen 5, G. Hinde sur, 160 ft from s and 760 ft from w line; 6, same sur, 300 ft e of No. 4. Moses A 5, G. Hinds sur, 354 ft n of No. 3; 6, same sur, 354 ft n of No. 5. Moses B 1, S. Shupe sur, 695 ft from e and 150 ft from s line. Tiller 6, G. Hinde sur, 300 ft e of No. 5; 5, same sur, 150 ft from n and 1050 ft from e line; 6, same sur, 1050 ft from w and 150 ft from s line. Gulf, Houston, Graef 1, R. B. Jarmon sur, 2500 ft from e and 150 ft from s line. Shell, Luling, Wm. Moses 4, A. Floyd sur, 200 ft from n and 150 ft from e line. Humble, Houston, Moses 3, G. Hinds sur, 450 ft from s and 150 ft from e line; 4, same sur, 150 ft from s and 761 ft from e line; 2, same sur, 150 ft from s and e lines. Tiller 5, G. Hinds sur, 150 ft from n and 450 ft from w line. Davis 4, A. Floyd sur, 450 ft from s and 150 ft from w line. Allen 2, G. Hinde sur, 268 ft from w and 150 ft from n line; 3, same sur, 460 ft from w and 160 ft from s line. Allen 4, G. Hinds sur, 150 ft from n and 568 ft from w line.

COLEMAN COUNTY—McCamey-Whitfield, Fort Worth, Sealy 1, S 35, G H & H sur, 1780 ft from w and 924 ft from s line. Gwinnup, Hoffman, Page & Quinn, Fort Worth, Gates 1, No. 44, M. Chaves sur, 312 ft w of center of e line.

CULBERSON COUNTY — Grisham-Hunter Corp. and Deep Rock Oil Co., Fort Worth, Kloh 1, S 33, B 59, Twp 7, 800 ft from n and 1422 ft from w line.

CROCKETT COUNTY — Tidal Oil Corp., Fort Worth, Weathered 1, S 30, B 31, H & T C sur, 5055 ft from ne and 330 ft from nw line.

CLAY COUNTY—Mid-Continent Pet. Corp., Wichita Falls, Stine 2, P C S L sur, 450 ft from w and 763 ft from s line; 3, same sur, 150 ft from w and 178 ft from s line. R. T. Belcher, Wichita Falls, Hanagan 1, P C S L sur, 150 ft from s and e lines.

CONCHO COUNTY—Duffy, Loofburrow, Wichita Falls, Hill 1, S 8, F. J. McCarthy sur, 200 ft from s and w lines.

CHAMBERS COUNTY—Cedar Bayou Oil Co., Crosby, Fitzgerald 1, C. C. P. Welch sur, north central part of lease.

DUVAL COUNTY—Humble, Houston, Kohler 15, S 401, 825 ft from s and 165 ft from n lines of s; 14, S 396, 165 ft from s and w lines of s 396; 16, S 401, 165 ft from s and w lines of s 401; 17, 165 ft from n and w lines of s 399.

EASTLAND COUNTY — C. M. Woodfin, Midland, Gray 213, 1, S 491, S P Ry sur, sw corner. Hoffer Oil Corp., Fort Worth, Gray 160, 1, S 485, S P Ry sur, 660 ft from s and e lines. Panhandle Ref. Co., Wichita Falls, Wheeler 1, McL. C. S. L. sur, 450 ft from n and 500 ft from w line. Lloyd Oil Corp., Fort Worth, Fox 15, McL. C. S. L. sur, 300 ft e of No. 13. F. E. Edwards et al, Eastland, Gibson 1, S 24, B 4, H & T C sur, 980 ft from w and 150 ft from s line. J. A. Garver, Rising Star, Fields 1, S 4, B 100, J. Rubarth sur, 200 ft from w and 7390 ft from s line.

FORT BEND COUNTY—Humble, Houston, Banker's Mtge. 1, Wm. Little sur, center. Gulf Prod. Co., Houston, S. G. Deatherage 1, E. Alcorn sur, 150 ft from s and e lines. Sugarland Ind. 1, Wm. Stafford sur, 150 ft from s and w lines.

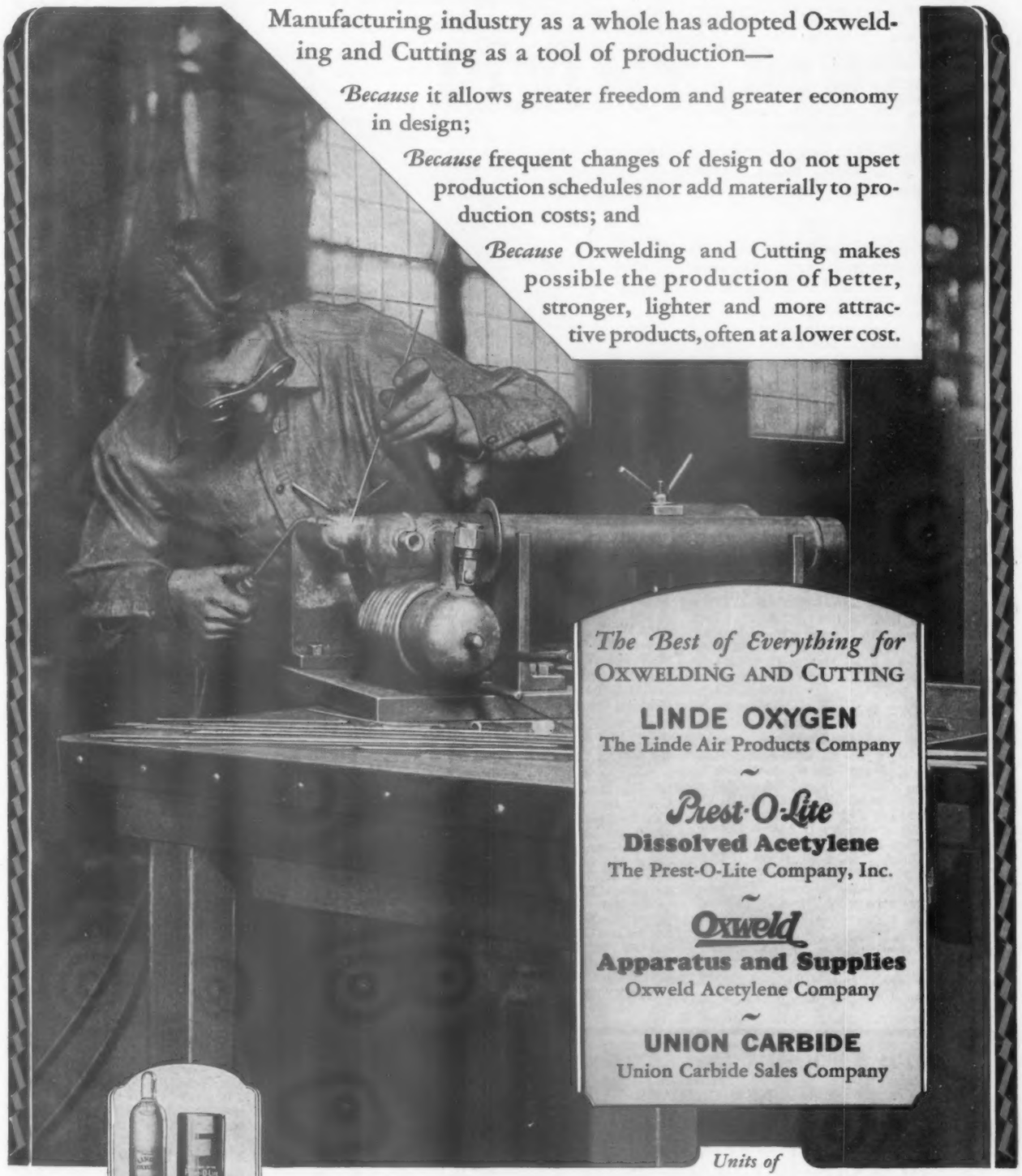
GRAY COUNTY — Mid-West Explo. Co., Amarillo, Bowers B 1, S 93, B 2, H & G N sur, 330 ft from n and 1650 ft from e line. Texas Co., Wichita Falls, Key 1, S 1, B & B sur, 400 ft from n and 500 ft from w line. J. R. Phillips, Amarillo, Heitholt 1, S 152, B 3, I & G N sur, center of ne¼ of sw ¼.

GONZALES COUNTY—Indian Pet. Corp., Rawlings, Wyo., Karnstadt 1, B 5, No. 2 Ry sur, 150 ft from n and 450 ft from w line.

GUADALUPE COUNTY—Magnolia, W. R. Shanklin 315, 9, H. Cottle sur, sw c.

HOWARD COUNTY — Schermerhorn Oil Co., Tulsa, Okla., Roberts A 5, S 137, B 29, W & N W sur, 300 ft from n and 400 ft from w line. Greene O. & R. Co., Fort Worth, Slaughter 1, S 32, B 31, T & P sur, center. Cranfill & Reynolds, Cisco, Kloh 1, S 3, B 2, T & P sur, 330 ft from s and 165 ft from e

Don't hesitate—take this advantage



Manufacturing industry as a whole has adopted Oxwelding and Cutting as a tool of production—

Because it allows greater freedom and greater economy in design;

Because frequent changes of design do not upset production schedules nor add materially to production costs; and

Because Oxwelding and Cutting makes possible the production of better, stronger, lighter and more attractive products, often at a lower cost.

The Best of Everything for OXWELDING AND CUTTING

LINDE OXYGEN
The Linde Air Products Company

~

Prest-O-Lite
Dissolved Acetylene
The Prest-O-Lite Company, Inc.

~

Oxweld
Apparatus and Supplies
Oxweld Acetylene Company

~

UNION CARBIDE
Union Carbide Sales Company

Units of

UNION CARBIDE AND CARBON CORPORATION

General Offices UCC *Sales Offices*

30 East 42nd Street, New York, N.Y. In principal cities of the country

55 Oxygen Plants—38 Acetylene Plants—99 Oxygen Warehouses—100 Acetylene Warehouses—38 Apparatus Warehouses—235 Carbide Warehouses

line. Magnolia Pet. Co., Dallas, Roberts 18, S 136, B 29, W & N W sur. Coyle-Concord Oil Co., San Antonio, Roberts 6, S 156, B 29, W & N W sur, 150 ft from e and 330 ft from n line.

HARRIS COUNTY—A. L. Fondren, Houston, Mason 10, 150 ft nw of No. 7. Navarro Oil Co., Houston, Dooley 14, J. Hamilton sur, 406 ft from e and 1238 ft from s line.

IRION COUNTY—Stocks 1, S 746, S. Wallstein sur, 633 ft from w and 2500 ft from s line.

JEFFERSON COUNTY—Yount-Lee Oil Co., Beaumont, McFaddin 93, P. Humphreys sur, 1588 ft from w and 860 ft from n line. Gladys 78, B 12, J. A. Veatch sur, 225 ft from e and 488 ft from s line.

JACK COUNTY—Wichita Falls, Loving 1, 2751, T E & L sur, center. Prairie O. & G. Co., Ranger, Bryson 2, I. Hughson sur, 580 ft w of No. 1.

JONES COUNTY—McMan O. & G. Co., Tulsa, Okla., Bickley 2, S 50, B 18, T & P usr, 300 ft from w and 330 ft from s line.

JIM HOGG COUNTY—A. L. Kitselman, Laredo, Lopez 1, S 255, B 6, 289 ft from n and 300 ft from w line.

LIBERTY COUNTY—Mrs. Carrie R. Brown et al, Orange, Turner 1, M. G. White sur, 50 ft from s and e lines. Navarro Oil Co., Houston, Baldwin 1, M. G. White sur, 50 ft from e and 300 ft from s line.

MONTAGUE COUNTY — Continental and Bridwell Oil Co., Wichita Falls, Cunningham A3, T. R. Edmundson sur, 400 ft w of No. 2. Wirt Franklin and Bell, Ardmore, Okla., Gaston 1, D. D. D. Baker sur, 150 ft from n and e lines.

McMULLEN COUNTY—Matt Holman, Del Rio, Schreider 1, H. M. Brewer sur, 8850 ft from n and 500 ft from w line.

McCULLOCH COUNTY—Magee, Silk et al, Wichita Falls, Frerich 1, S 12, O. T. Melvin sur, center. R. B. Magee, Wichita Falls, Frerich 1, S 12, O. T. Melvin sur, 1320 ft from s and e lines.

MOORE COUNTY—Master O. & G. Co., Amarillo, Sneed 1, S 58, B 6T, T & N O sur, 660 ft from n and 1446 ft from w line. Masterson 1, S 14, B B10, E L & R sur, 1320 ft from w and 200 ft from s line. McMan O. & G. Co., Tulsa, Robinson 2, No. 760, 330 ft from n and 9990 ft from e line.

NUECES COUNTY—Agua Dulce O. & G. Co. et al, Agua Dulce, Wolcott 1, B 1, Agua Dulce sur, 150 ft from s and e lines.

PECOS COUNTY — K. A. Crowley, Fort Worth, Heiner 1, S 589, B 105, G C & S F sur, 150 ft from s and w lines. Pecos Valley Oil Co., Fort Stockton, Fee 2, S 22, B 10, H & G N sur, 310 ft e of No. 1. Grayburg Oil Co., San Antonio, University 1, S 2, B 17, 990 ft from n and 330 ft from e line. Gulf, Fort Worth, M. A. Smith B 16, S 22, B 194, G C & S F sur, 1060 ft from n and 994 ft from w line.

PALO PINTO COUNTY—G. A. Schnaufer, Graham, Costello 1, No. 94, 450 ft from w and 150 ft from s line.

REAGAN COUNTY — R. V. Oberholtzer, San Angelo, Talley 1, S 6, G C & S F sur, 330 ft from w and 1650 ft from s line. Big Lake Oil Co., Texon, University 166, S 12, B 2, Univ Lands sur, 735 ft e of No. 113; 165, same sur, 520 ft e of No. 60; 164, same sur, 520 ft w of No. 121; 163, same sur, 561 ft s of No. 103; 162, same sur, 520 ft e of No. 143; 161, same sur, 800 ft e of No. 50; 160, same sur, 660 ft w of 108.

REEVES COUNTY — Jarmon & McRobe, Fort Worth, I. J. Bell 1, S 20, B 2, H & G N sur, 150 ft from s and 600 ft from s line. Southern Crude Oil Pur. Co., Wichita Falls, Kloh 1, S 23, B 51, T & P sur, 2310 ft from s and e lines.

SHACKELFORD COUNTY—A. C. Walker, Albany, Huskey 16, No. 529, T E & L sur, 300 ft n of No. 13. Roeser & Pendleton and Marland Oil Co., Albany, Kloh 1, S 35, B 46, Twp 1N, 415 ft w of No. 4 (Winkler County.) Cook 8, S 83, E T Ry sur, 415 ft w of No. 4. A. J. Hughes et al, Albany, Newell, 1, S 87, E T Ry sur, 150 ft from s and w lines. L. M. Patterson et al, Moran, Durham 1, S 1, Univ Lands sur, 1270 ft from n and 150 ft from e line. Cranfill & Reynolds, Cisco, Diller 2, S 5, B 1, E T Ry sur, 150 ft from n and 750 ft from e line. Steele & English, Albany, Humber 1, S 12, Blind Asy sur, 150 ft from s and e lines. Roeser & Pendleton and Phillips Pet. Corp., Albany, Bernstein A4, 532, T E & L sur, 300 ft ne of No. 2. Grisham & Hunter Corp., Abilene, Davis 1, S 20, B 13, T & P sur, 150 ft from s and w lines. Ohio Texas Oil Co., Inc., Albany, Matthews 13, S 29, E T Ry sur, 50 ft s of No. 5. Dull-Earls Texas Co., Albany, Matthews 5, S 32, E T Ry sur, 146 ft from n and 155 ft from e line.

SAN PATRICIO COUNTY — Spencer & Rhoads, Fort Worth, Bennett 2, A. S. Taft sur, 900 ft from w and 400 ft from s line.

STEPHENS COUNTY—Lone Star Gas Co., Dallas, Compton 1, S 20, B 7, T & P sur, 800 ft from w and 330 ft from n line.

THROCKMORTON COUNTY—Herbert Oil Co., Fort Worth, Reynolds 1, S 2, B 18, A B & M sur, 150 ft from s and e lines.

UPTON COUNTY—L. H. Wentz, Eastland, Sherk 5, S 35, B 1, M K & T sur, 1649 ft from e and 2304 ft from s line. Gulf Prod. Co., Fort Worth, Keels 640, 1, S 4, B N, H E & W T sur, 1320 ft from n and e lines. McElroy 640 60, S 205, B F, C C S D & R G N G sur, 330 ft from s and e lines.

WICHITA COUNTY—Staley, Wynne & Co., Wichita Falls, Kemp & Kempner 11, B 82, W V F L sur, ne corner. Hammon & Garrett, Wichita Falls, McCarty E E1, W. R. Eaves sur, 150 ft from s and w lines. Jeffers & Gilchrist, Burkburnett, Waits 15, B B D & C sur, 900 ft from n and e lines. American Ref. Properties, Wichita Falls, Hooks 1, R. J. Scott sur, 450 ft from e and 150 ft from s line. Comac Drilling Co., Wichita Falls, Bishop 4, S. Netherly sur, 300 ft w of No. 2. King Royalty Co., Wichita Falls, Horton 13, B B B & C sur, 200 ft from e and 150 ft from s line. Ryan Consolidated Pet. Corp., Bartlesville, Okla., Nance 1, W. R. Eaves sur, 700 ft w of center of e line. Panhandle Ref. Co., Wichita Falls, Burnett 6, S 2, G. P. Meade sur, 387 ft n of No. 1. C. A. Everts et al, Wichita Falls, Powell 1, C. Winters sur, 800 ft from n and 450 ft from e line. Kimbell-Bostic, Burkburnett, Denny 4, W. M. Graves sur, 300 ft ne of No. 2.

WINKLER COUNTY—Texas Canadian Oil Co., San Angelo, Kloh-Ramsey 1, S 35, B 46, Twp 1N, 1320 ft from s and w lines. Prairie O. & G. Co., Ranger, Cowden 6, S 3, P S L sur, 330 ft from ne and 440 ft from se line. Dixie & Southern crude Oil Pur. Co., Fort Worth, I. Hendrick A6, S 4, B 12, 990 ft from n and 1320 ft from e line; I. Hendrick F5, S 33, B 5, 330 ft from s and 990 ft from e line; I. Hendrick H7, S 28, B B5, 990 ft from w and 2310 ft from s line.

WILBARGER COUNTY — Texas Co., Wichita Falls, Waggoner E17, S 25, B 4, H & T C sur, 414 ft sw of No. 7. Staley, Wynne & Co., Wichita Falls, Waggoner 2, S 32, B 4, H & T C sur, 300 ft e of No. 1. Fain McGaha Oil Corp., Wichita Falls, Waggoner W 3 S 32, B 4, H & T C sur, 150 ft from s and 750 ft from w line. Waggoner L 9, S 31, B 4, H & T C sur, 205 ft from s and e lines.

WASHINGTON COUNTY — Sun Oil Co., Beaumont, J. Grote 2, J. E. Perry sur, 300 ft se of No. 1. C. Eimann 2, N. Clay sur, 150 ft from n and w lines. G. F. Grote 4, N. Clay sur, 150 ft from n and e lines; 5, same sur, 747 ft sw of No. 2.

WHEELER COUNTY — Wischkaemper Bros., Shamrock, Adamson 1, S 50, B 17, I & G N sur, 660 ft from s and e lines. Wischkaemper & Johnson, Shamrock, Fee 2, S 80, B 23, H & G N sur, 164 ft from w and 175 ft from s line.

WEBB COUNTY—Newton Drilling Co., Laredo, Bruni 4, B 56, Arriba sur, 480 ft from n and 250 ft from w line.

WHARTON COUNTY — Ferdinand Heine, Jacksonville, Woytek 11, S. F. Austin sur, 70 ft from e and 650 ft from s line.

YOUNG COUNTY—N. D. Goldsmith, Olney, Bishop 1, 162, T E & L sur, 150 ft from s and e lines. Fain-McGaha Oil Corp., Wichita Falls, Campbell I 1, 1383, T E & L sur, 1000 ft from e and 60 ft from s line.

ZAPATA COUNTY—Killam & Duggan, Laredo, Cuellar 4, J. M. Pereda sur.

LOUISIANA

CADDO PARISH—Eastern Carbon Black Company, Monroe, La., Bryson 4, 8-17n-16w, 660 ft s and 815 ft e of nw c.

CALCASIEU PARISH—Vacuum Oil Co., Houston, Texas, Miller A-22, 9-10s-9w, 666 ft e and 50 ft n of center; Miller 24, 9-10s-9w, 100 ft s and 337 ft s of nw c sw ne.

CAMERON PARISH — Cameron Oil Co., Inc., Ludger Duhon 3, 28-12s-10w, 1000 ft n and 120 ft e of sw c.

IBERVILLE PARISH—Standard Oil Co. of La., Shreveport, Schwing Lbr. & Shingle Co. 2, 74-9s-10e, 950 ft n and 313 ft w of se c sw.

MOREHOUSE PARISH—Southern Carbon Co., Monroe, Tensas Delta 9, 2-20n-4e, 660 ft s and 660 ft e of center. Stovall Drilling Co., Monroe, L. Ethridge 2, 22-20n-4e, 306 ft s and 306 ft e of nw c ne.

OUACHITA PARISH—La Del Oil Properties, Monroe, Fee 46, (amended permit), 6-19n-5e, 660 ft s and 2640 ft w of ne c. Southern Carbon Co., Monroe, Fairbanks 11, 33-20n-4e, 660 ft n and 1320 ft w of se c.

PLAQUEMINE PARISH—The Texas Co., Shreveport, Garden Island Bay 1, 107-23s-32e, 3300 ft s and 200 ft w of ne c.

RICHLAND PARISH—Northern Louisiana Natural Gas Co., Monroe, L. R. Hemler 1, 22-16n-6e, 660 ft n and 495 ft w of se c ne.

ST. MARTIN PARISH—Rycade Oil Corp., Houston, Bayou Boullion 7, (amended permit), 13-9s-8e, 3019 ft n and 1242 ft w of se c; Bayou Boullion 7, 13-9s-8e, 3092 ft n and 3185 ft w of se c; La. State 3, 13-9s-8e, 3190 ft n and 2744 ft w of se c.

WEBSTER PARISH—J. W. Clark, Trustee, Shreveport, Mayfield 2, 20-23n-9w, 660 ft n and 1980 ft w of se c. Magnolia Pet. Co., Shreveport, G. W. Adkins 1, 4-22n-9w, 660 ft s and 660 ft e of nw c ne nw.

ARKANSAS

NEVADA COUNTY—Humble O. & R. Co., 21.

UNION COUNTY—Ohio Oil Co., Shreveport, La., L. S. Adams 1, sw nw 7-17-13. Revenger Oil Corp., El Dorado, Ark., W. H. Perdue B-2, se ne 9-17-14.

Standard Supply and Hardware Company
Incorporated
NEW ORLEANS, LA.
OIL WELL AND OIL REFINERY SUPPLIES
Dynamite and Blasting Equipment — Camp Equipment
STEAM GOODS—HARDWARE—MACHINERY—RAILWAY
MILL AND PLUMBING SUPPLIES
PIPE—VALVES—FITTINGS—BOILER TUBES—WELL CASING
FLEXIBLE TUBING—HOSE—PACKING—LEATHER AND RUBBER BELT
PAINTS OILS AND VARNISHES
PIPE CUTTING AND PIPING OF PLANTS A SPECIALTY
P. O. Drawer 620
Long Distance Phones
Raymond 2251 to 2256 Inc.
Cable Address "GIST"
Codes Used—
A. B. C. 5th Edition.
Western Union.
William K. DePass, *President*
J. M. Kinabrew, *Vice-President*
Cal F. Hadden *Secretary-Treasurer*
Office and Salesroom
822-838 Tchouptoulas St.
Bet. Julia and St. Joseph

5 POINT PIPE

1

Resists Corrosion—the puddling process* coats every inmost particle of Reading Pipe with age-lasting silicious slag.

2

Defies Vibration—puddling imparts a tough, rope-like structure that does not crystallize or fracture sharply.

3

Threads Better—clean threads are quickly cut, insuring tight joints that stay leak-proof.

4

Welds Easily—pipe walls have maximum strength; no "weak spots".

5

Holds Coatings Permanently—due to the texture of genuine puddled wrought iron, galvanizing adheres to Reading Pipe four times more thickly than to any other ferrous pipe material. Paint and other coatings last indefinitely.

"Five Point" Pipe Gives FULL TIME Service

The hidden faults of ordinary cheap pipe become glaringly apparent in oil field or refinery use. Here there must be *complete* dependability—dependability such as only "five point" pipe can give.

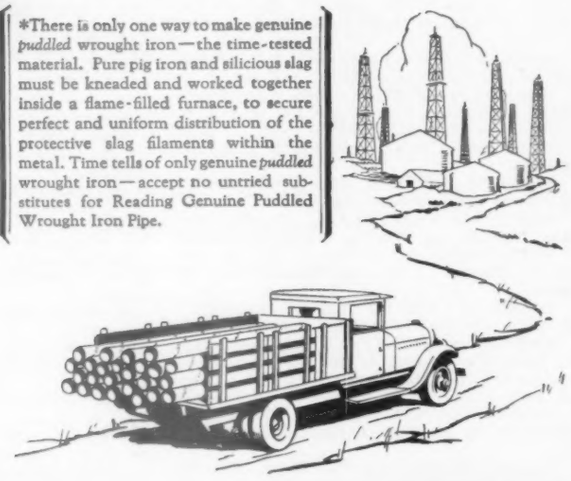
Reading Pipe is "five point" pipe because it is genuine *puddled* wrought iron. It resists both corrosion and vibration. It has both easy threading *and* better welding. Coatings adhere tenaciously throughout the long, long life of this time-tested product.

To insure full-time pipe service, specify Reading Pipe—identified by the Reading name and spiral knurl mark on every piece. Then you will know you are getting "five point" pipe, made of genuine *puddled* wrought iron, conforming to standard of A. P. I. specifications.

Reading pipe distributed by:

Frick-Reid Supply Corp.
Bradford Supply Co.
Republic Supply Co.
Superior Tube Co.
Reading Iron Co. of Texas

*There is only one way to make genuine *puddled* wrought iron—the time-tested material. Pure pig iron and silicious slag must be kneaded and worked together inside a flame-filled furnace, to secure perfect and uniform distribution of the protective slag filaments within the metal. Time tells of only genuine *puddled* wrought iron—accept no untried substitutes for Reading Genuine Puddled Wrought Iron Pipe.



READING '29 (R)

READING PIPE

GENUINE PUDDLED WROUGHT IRON

READING IRON COMPANY, Reading, Pennsylvania

Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Detroit, Houston, Los Angeles, New York, Pittsburgh, Cleveland, St. Louis, Tulsa, San Francisco, Fort Worth, Seattle, Philadelphia, New Orleans

WILDCATS FROM ALL SECTIONS

OKLAHOMA

WOODS COUNTY—T 28n, R 16w, Sec. 11, Geo. Vincent et al's Freedom 1, c sw, Ponds for deep test.

GRANT COUNTY—T 28n, R 3w, Sec. 24, Lario O. & G. Co. et al's Conneil, nws, re run 8″ 2656 ft.

HARPER COUNTY—T 27n, R 21w, Sec. 24, A. F. Kopisch No. 1 Selman, nec se, spudded and sd.

WOODS COUNTY—T 27n, R 16w, Sec. 33, Sinclair 1 Share, c ne sw, rig. T 27n, R 15w, Sec. 20, Sooner State Oil Co. & E. R. Black's Marcum 1, c sw, spudded and sd.

GRANT COUNTY—T 26n, R 4w, Sec. 34, Sooner State Oil Co. Royce 1, swc nw sd 550 ft.

KAY COUNTY—T 26n, R 2e, Sec. 32, J. A. Vincent & Nat'l Union's McNeal 1 nw cor ne, sd 2795 ft.

HARPER COUNTY—T 25n, R 22w, Sec. 14, Hoffer Oil Co.'s Cooper 1, nwc se, sd 4182 ft, blk in litigation.

WOODS COUNTY—T 25n, R 15w, Sec. 10, Bu Vi Bar et al's 1, sec sw, drlg 3120 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden Vollner's 2, nec se ne sw, lost tools 5640 ft, sd.

CIMARRON COUNTY—T 5n, R 5e, Sec. 22, Magnolia's School Land 1, c se ne, fishg drill pipe 470 ft.

TEXAS COUNTY—T 1n, R 18e, Sec. 11, Three way Oil Co.'s Price 1, sec nw, sd 3490 ft.

WOODWARD COUNTY—T 24n, R 17w, Sec. 32, Otstot Dev. Co.'s Simmons 1, sec, sd 1500 ft.

WOODS COUNTY—T 24n, R 13w, Sec. 18, Miller's and others Copenhaver 1, nwc, spudded and sd.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, Washoma Oil Co.'s Acre 1, swc ne, rig.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer's White 1, sec nw, sd 4755 ft.

WOODWARD COUNTY—T 23n, R 20w, Sec. 9, Billy Oil Co.'s Wyatt 1, c se, sd 1553 ft.

MAJOR COUNTY—T 23n, R 16w, Sec. 4, Wilson et al's 1, nec sw, rig.

WOODWARD COUNTY—T 21n, NR 19w, Sec. 15, Burgoyne Bros.' 1, swc ne, sd 1950 ft.

WOODWARD COUNTY—T 21n, R 21w, Sec. 25, Sharon's Elmore 1, swc, sd 3025 ft, rig down.

MAJOR COUNTY—T 20n, R 14w, Sec. 23, Keller et al's Horton 1, ne ne, spudded and sd.

GARFIELD COUNTY—T 20n, R 4w, Sec. 9, Marland's Looman 1, nec ne, sd 5735 ft, csg parted. Sec. 12, Marland's Miller 1, swc, sd 4586 ft.

DEWEY COUNTY—T 18n, R 15w, Sec. 9, Huckleby & McCoy's Perfect 1, nec, fishg 4395 ft.

LOGAN COUNTY—T 16n, R 3w, Sec. 35, Haley & Consolidated Drlg Co.'s Quier 1, sec sw, fishg tools 3970 ft.

KINGFISHER COUNTY—T 16n, R 6w, Sec. 27, Crawford & McKenna's Sturgeon 1, sec sw, sd 4846 ft.

BLAINE COUNTY—T 15n, R 12w, Sec. 26, W. J. Donley's Dickens 1, sec nw, drlg 4420 ft.

CANADIAN COUNTY—T 14n, R 6w, Sec. 9, A. D. Spears' Platt 1, sec ne, sd 3223 ft. T 13n, R 10w, Sec. 18, Wirt Franklin's & I. T. I. O. North 1, c ne ne, drlg 2180 ft.

OKLAHOMA COUNTY—T 13n, R 3 w, Sec. 18, Slick & Bailey's Lufkin 1, c ne se, drlg 4790 ft. T 12n, R 3w, Sec. 15, Cromwell et al's Thompson 1, sec ne ne, drlg 7124 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey's Robinson 1, c ne nw, sd after spudding.

OSAGE COUNTY—T 22n, R 8e, Sec. 8, Harry McGill's 1, sw c se, Skinner 2335-49 show gas and hfw, sd 2688 ft.

PAWNEE COUNTY—T 22n, R 5e, Sec. 33, Washoma Oil Co.'s Buffalo 1, sec nw, td 3812 ft, pb to 3200 sd.

ABBREVIATIONS

NOTE—The following is the explanation of abreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

LINCOLN COUNTY—T 16n, R 4e, Sec. J. V. Bailey et al's House 1, c ne se, 3660 cement cave. T 16n, R 5e, Sec. 2, L. C. Wheeler & W. K. Mote et al's Wolfe 1, nwc ne sw, drlg 1385 ft. T 16n, R 6e, Sec. 19, Flynn & Morgan's Finely, swc location. T 12n, R 3e, Sec. 29, Phillips' Roberson 1, sec nw, rig.

OKFUSKEE COUNTY—T 12n, R 9e, Sec. 30, Tidal Oil Co.'s Barnett 1, sec ne ne, sand 3945-75 ft, 15m gasser.

MUSKOGEE COUNTY—T 13n, R 18e, Sec. 33, L. T. Haynie's Linder 1, c se, 2307 ft, sd.

McINTOSH COUNTY—T 12n, R 18e, Sec. 15, A. B. Wolfe et al's Beck 1, nwc se, spudded and sd.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, swc nw se, Wilcox 5443-70 ft, drilled 3 ft, in week.

HASKELL COUNTY—T 9n, R 18e, Sec. 10, Marion Oil Co.'s Sanders 1, nwc ne sw, sd 1800 ft.

LATIMER COUNTY—T 5n, R 18e, Sec. 15, Limestone C. & G. Co.'s Murray 1, swc, 1½m gas 2518-22 ft, drlg 2530 ft.

SEMINOLE COUNTY—T 11n, R 6e, Sec. 27, Furham's Fay 1, sec nw sw, hfw 4773 ft, plugging.

OFUSKEE COUNTY—T 11n, R 7e, Sec. 21, T. B. Slick's Wolfe 1, sec ne se, centg 4000 ft.

SEMINOLE COUNTY—T 11n, R 7e, Sec. 34, Phillips' Mills 1, nwc sw, drlg 3870 ft.

CLEVELAND COUNTY—T 10n, R 2w, Sec. 8, Slick and Phillips' Sudik 1, c ne ne, drlg 4410 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 16, McCulloch et al's Lincoln 1, sec nw, location. Twp 10n, R 7e, Sec. 5, Marland Oil Company's Strothers 1, nwc se ne, centg 8 in. 3724 ft.

POTTAWATOMIE COUNTY—T 9n, R 5e, Sec. 30, Magnolia Pet. Co.'s Germany 1, sec nw, sand 4415-19 hfw pb to 4212 to pump. T 8n, R 2e, Sec. 24, Superior Oil Corp.'s Jones 1, swc nw ne drlg 5145 water. T 8n, R 3e, Sec. 12, T. B. Slick's Nix 1, sec nw nw drlg 4366 ft.

SEMINOLE COUNTY—T 8n, R 8e, Sec. 4, McCulloch's McGilbray 1, swc ne, fishg 3100 ft.

CLEVELAND COUNTY—T 7n, R 1w, Sec. 15, Sooner State Oil Co.'s Vandeveer, nec nw sw, sd 3120 ft.

POTTAWATOMIE COUNTY—T 7n, R 2e, Sec. 17, T. B. Slick's Spangler 1, nwc se nw nw, fishg 6098 ft. T 6n, R 4e, Sec. 19, Rush & Baughm's Laster 1, sec ne ne, surface pipe set.

McCLAIN COUNTY—T 5n, R 3e, Sec. 22, Mid Cont. Pet. Corp.'s 1, sec, rig. T 5n, R 3e, Sec. 29, Empire's Bonner 1, sec nw nw, drlg 4707 ft.

PONTOTOC COUNTY—T 5n, R 4e, Sec. 36, Denver P. & R.'s Roberts 1, sec ne ne, drlg 625 ft.

SEMINOLE COUNTY—T 5n, R 6e, Sec. 11, Slick's Harjo 1, nwc ne, td 3950 ft, hfw top Wilcox 3940 ft, plugging.

HUGHES COUNTY—T 5n, R 9e, Sec. 17, E. W. Whitney's Huddleston 1, sec sw, ur 6-inch 3345 ft.

PONTOTOC COUNTY—T 4n, R 8e, Sec. 23, Independent's Hampton 1, nec se, drlg 662 ft.

PITTSBURG COUNTY—T 4n, R 12e, Sec. 32, Kerr & Key's Rall 1, c nw nw, drlg 350 ft.

COAL COUNTY—T 2n, R 8e, Sec. 6, F. T. Hepburn's Richardson 1, c ne ne, rigging.

MURRAY COUNTY—T 1n, R 2e, Sec. 17, Revels & McGee's Wolfe 1, nwc, sd 1850 ft.

GARVIN COUNTY—T 1n, R 3e, Sec. 32, Ramsey's Malickey 1, c sw ne, drlg 1760 ft .

COAL COUNTY—T 1n, R 9e, Sec. 24, Galbreath et al's Jones 1, swc se, sd 3270 ft.

CUSTER COUNTY—T 14n, R 14w, Sec. 1, W. E. Witt's Wellman 1, c se, sd 100 ft.

ROGER MILLS COUNTY—T 11n, R 26w, Sec. 4, L. C. Hivick's Davis 1, c nw ne, sd 700 ft.

BECKHAM COUNTY—T 8n, R 25w, Sec. 1, C. L. Martin's Daly 1, c nw se, drlg 2815 ft. T 8n, R 22w, Sec. 20, Carson, et al's Denby 1, swc se ne, drlg 990 ft. T 8n, R 21w, Sec. 33, Day Oil Co.'s Ault 1, nw nw, fishg 1508 ft.

KIOWA COUNTY—T 7n, R 17w, Sec. 34, G. B. Cloyes' Bristle 1, swc ne, sd 915 ft. T 7n, R 15w, Sec. 35, David Malernee's Van Kirkland 1, nwc, sd 850 ft, Flowing sulphur water. T 6n, R 15w, Sec. 6, Johnson-McDowell's 1, sw ne, td 2700. T 6n, R 14w, Sec. 32, Russel & Sloan's Madden 1, nec sw sw, drlg 910 ft.

CADDO COUNTY—T 6n, R 12w, Sec. 29, W. J. Hartley's Galbreath 1, sec nw se, (on dd) sd 3394 ft.

COMANCHE COUNTY—T 4n, R 11w, Sec. 2, Wirt Franglin Pet. Corp.'s 1, hollow, nwc, drlg 3412 ft.

JACKSON COUNTY—T 1n, R 20w, Sec. 4, Houseman et al's Northington 1, nec, sd 2020 ft.

KIOWA COUNTY—T 1n, R 17w, Sec. 13, Allen Bros.' Howell 1, nwc se, sd 610 ft.

STEPHENS COUNTY—T 1n, R 7w, Sec. 2, Stahl & Burris' Jefferson 1, sec ne nw, drlg 2700 ft.

COTTON COUNTY—T 1s, R 11w, Sec. 34, Shasta Oil Co.'s Indian 1, nec, rur.

STEPHENS COUNTY—T 1s, R 7w, Sec. 12, Ilsing, Russell & Nance's Houston 1, nec sw sw, sand 2328-35 ft, show oil.

KIOWA COUNTY—T 2s, R 16w, Sec. 6, Landfair's 1, sec sw se, drlg 2535 ft.

COTTON COUNTY—T 2s, R 12w, Sec. 31, Pearce & Brown's Heitzler 1, sec nw, drlg 1800 ft.

TILLMAN COUNTY—T 3s, R 18w, Sec. 29, Dixie Oil Co.'s Harrison 1, nec nw, drlg 2732 ft.

COTTON COUNTY—T 3s, R 10w, Sec. 11, E. J. Stumpf's Jones 1, nwc ne, location.

STEPHENS COUNTY—T 3s, R 8w, Sec. 26, E. J. Stumpf's Simmons 1, swc rur.

COTTON COUNTY—T 4s, R 12w, Sec. 16, Gailer & Dyson's Thomas 1, sec sw, sd 2127 ft.

JOHNSTON COUNTY—T 1s, R 7e, Sec. 29, Smitty-Kinsley's Lane 1, sec nw, sd 1306 ft.

CARTER COUNTY—T 4s, R 2e, Sec. 32, Tex-Okla Drlg Co.'s Anderson 1, sec ne se, sd 350 ft. T 5s, R 3w, Sec. 19, Devonian Oil Co.'s Myer 1, nwc se, drlg 2680 ft.

BRYAN COUNTY—T 9s, R 9e, Sec. 36, W. J. Endicott's Caig 1, c nw ne, drlg 950 ft.

KANSAS

BARBER COUNTY—Barbara Oil Co.'s Lytle 1, CNL ne ne sw 12-33-13w, dr 3260 ft; Blunk 1, c ne nw 20-34-13w, fsh 4755 ft. Rolands et al's Pickens 1, ne nw ne 27-30-14w, sd 4223 ft. Allison & Fitzwilliams' Morrise 1, c nw se se 9-30-12w, rig.

BUTLER COUNTY—LaRobb et al's Bronsenger 1, ne se 24-27-3e, ru.

CHASE COUNTY—Grisner & Fowler's Carson 1, ne ne 9-21-7e, sd 3150 ft.

COWLEY COUNTY—Pyle & Sutter's Lindstrum 1, se ne 9-35-4e, d 3000 ft. Empire-Marland-Twin State's Feaster 1, nw ne 36-32-5e, d &a 3145 ft. Wakefield & Osborne, Osborne 1, nw ne 18-30-5e, ru.

EDWARDS COUNTY — Amerada - Wilcox, Teansil 1, nw cor 32-25-19w, d 4245 ft. British-American Oil Co.'s McCarty 1, ne nw 31-25-17w, rd 1850 ft.

ELLIS COUNTY—Rush Oil Co.'s Gatewood

A $100,000 Well and a $? Pump---

Does price *really* count?

The price of an oil well pump means little when compared with the investment in the well —$25,000, $50,000, $100,000 or perhaps $200,000. Service is what counts—steady production, infrequent pulling jobs, etc. Axelson Pumps at ten times their cost would still be the cheapest investment.

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

Axelson Machine Company

P. O. Box 337 Los Angeles

Tulsa St. Louis

New York City, 30 Church St.

Mid-Continent and Eastern Distributors:
Frick-Reid Supply Corporation

AXELSON *Oil Well Pumps*

Say you saw it in The OIL WEEKLY

1, nw 4-15-20w, sd 110 ft. Finney & Weimer, Freeman 1, nw se se 24-15-20w, spd and sd. Empire's Wann 1, ne 31-12-19w, dr 3600 ft. Transcontinental's Boetcher 1, nw se sw 21-13-19w, sd 3858 ft. Phillip's Brull 1, c nw 34-14-17w, dr 3100 ft. Phillip's Schmeidler 1, nw cor 20-12-17w, fsh 1205 ft. Labette Oil Co.'s Urbank 1, ne nw nw 19-15-16w, d 3755 ft. Cosby et al's Robbins 1, sw nw 15-14-16w, ru. Phillip's Johnson 1, sw ne 9-13-19w, dr 510 ft. Derby & Empire's Krause 1, nw sw sw 17-14-18w, bailing water 3829 ft. Davis & Hazlett Weiland 1, nec 1-13-18w, rig burned, td 3955 ft.

GREENWOOD COUNTY—P. H. Balieu's Bright 1, ne sw 22-27-1e, sd 1210 ft.

HARPER COUNTY—Amerada's Mendiville 1, c se se 24-34-6w, co 5353 ft, td 5360 ft.

HARVEY COUNTY—Margaret Gay Oil Co.'s Grouse 1, nw ne nw 29-23-1w, dr 700 ft. Helmerick & Payne Lindamood 1, c sw ne sw 2-22-1e, dr 675 ft. Enpire's Tangeman 1, c sw ne ne 19-22-1e, dr 560 ft. R. F. Garland's Cox 1, ne cor 27-24-1w, dr 2310 ft. Fisher & Lauck's Regier 1, nw ne 17-23-2e, dr 1500 ft. Austin's Neiman 1, swc 21-24-2e, dr 2960 ft.

JEFFERSON COUNTY—Wichita Oil Co.'s Simpson 1, nw sw sw 19-10-17e, ru and sd.

LANE COUNTY—Blankenship Pet. Co.'s Schaeffer 1, nec ne 24-16-28w, spd and sd.

MARION COUNTY—Connell & Prairie's Zirak 1, se sw 3-18-3e, rig. Meyers' Papp 1, sw ne 10-18-2e, spd. Hartman & Skaer & White Eeagle's Kline 1, ne nw 28-18-3e, dr 425 ft.

MARSHALL COUNTY—Irwin et al's Cooper 1, ne nw 10-3-7e, spd.

MORRIS COUNTY—Hiatt et al's Blythe 1, nw ne 35-15-5e, rig.

McPHERSON COUNTY—McPherson County Gas Co.'s Stein 1, sw ne sw 17-18-1w, sd 3510 ft. Ted Washabaugh's Vosshell 1, ne ne 9-21-3w, 8-in cas 2552 ft. Lariaux et al's Martinan 1, ne se 9-19-3w, rig. Mid Kansas' Yoder 1, c nw sw 8-20-4w, dr 2635 ft.

NESS COUNTY—Barnsdall's Lauck 1, c sw 35-18-21, dr 1120 ft.

OSBORNE COUNTY—L. D. Jarvis Jellison 1, sec 13-10-15w, dr 620 ft.

OTTAWA COUNTY—Anderson et al's Bank 1, ne nw 28-10-2w, sd 2820 ft.

PAWNEE COUNTY—F. C. Troupe's Lovett 1, cel ne ne 31-21-16w, sd 1560 ft.

PHILLIPS COUNTY—Watsonian Oil Co.'s Marklein 1, ne sw 21-3-19w, 6-in at 3446 ft. Watsonian and British-American's Weinman 1, c c sw sw 34-2-19w, dr 800 ft.

RICE COUNTY—Allison & Fitzwilliams' Poland 1, ne sw ne 36-19-8w, cellar. Higgins & Steinbuble, Shurr 1, ne sw 21-20-10w, dr 625 ft.

RUSH COUNTY—Danciger O. & R. Co.'s Pinonka 1, c ne sw ne 17-19-17w, sd 530 ft. Sinclair's Beiching 1, nw ne nw 9-16-16w, dr 3690 ft. Central Commercial's Branck 1, nec sw sw 12-17-16w, spd and sd. Phillips' Legleiter 1, c ne nw se 10-16-18w, fsh 440 ft.

SALINE COUNTY—M. Esty et al's Peterson 1, c ne 6-16-5w, spd and sd. Nathan-Jones et al's Robertson 1, nw sw 27-14-2w, ur 6 in 3070 ft.

SEDGWICK COUNTY—Magnolia's Wise 1, nwc 36-28-1w, dr 300 ft. Bu-Vi-Bar Pet. Co.'s Steel 1, sec 1-26-2w, hfw 3875 dry and abn. Barnsdall's Samuels 1, ne nw 24-25-1e, swb 170 bbls oil 60 water at 3055 ft. Barnsdall's Faber 1, sw ne 6-27-1w, dr 3065 ft. Morgan & Tilley's Fitzgerald 1, nw ne 5-26-1w, ru. Van Zandt & Mason's Fox 1, c nw sw 19-25-1w, dr 3200 ft. Connell Oil Co.'s Cross 1, ne cor 27-25-1w, ur 6 in, td 3120 ft. Morgan et al's Corn 1, sw ne 28-25-1w, 10-in cas at 2330 ft. Kyser et al's Street 1, sw nw 28-26-2w, 10 in cas 1860 ft. H. H. Patton Ryder 1, nec 22-25-1e, dr 1250 ft. Lario & Blair's Tjaden 1, c ne se 22-29-2w, dr 2150 ft. Maglason's Buckles 1, nw se 3-28-1w, sd 250 ft. McCulloch et al's Jchn 1, c ne sw ne 24-29-1e, dr 2600 ft. Miller & Wentz's Shaeffer 1, nw ne 9-27-2w, rig. Lewis et al's Taylor 1, nw ne 23-27-2e, sd 1450 ft. Shawyer et al's Reeves 1, c se sw se 19-28-1e, dr 1365 ft. Austin Drlg. Co.'s Stuckey 1, sw nw 12-26-5w, bldg rig. Washabaugh's Lowery 1, c nw ne ne 3-26-2w rig.

SHERMAN COUNTY—A. L. Henson et al's Murray 1, ne se nw 22-7-40w, sd 3035 ft.

SMITH COUNTY—Mid-Kansas' Blank 1, nec 4-2s-13w, dr 1260 ft.

STEPHENS COUNTY—W. Sidwell et al's Kelly 1, sw ne 16-34-38w, co 1180 ft. Trees Oil Co.'s Unknown 1, sw ne sw 3-35-38w, set 12 in cas 375 ft. McKenna et al's Hamm 1, se ne 10-33-28w, dr 1700 ft.

SUMNER COUNTY—Gypsy's Williams 1, nw se sw 16-35-3w, fsh 4400 ft. McCulloch et al's Tuttle 1, sw ne 29-34-1w, d and a 4638 ft. Davidson et al's Strickland 1, sw se 12-35-1w, rig.

TREGO COUNTY—Central Commercial Oil Co.'s Ellis 1, ne sw ne 20-13-21w, sd 3300 ft.

WASHINGTON COUNTY—McCool & Vincent's Linn 1, nw ne 27-4-3e, ru.

NORTHERN CALIFORNIA

KERN COUNTY

BUTTONWILLOW—Doheny-Stone Drilling Corp.'s Salisbury 1, 7-29-24, co 4671 ft. Milham Exploration Co.'s Harris 1, 8-28-23, rigging up. Richfield Oil Co.'s Kerwin 1, 21-26-22, re-dr 4550 ft; Redding 1, 36-27-23, dr 200 ft.

COMANCHE POINT—W. W. Stabler's 1, 32-32-29, dr shale 3312 ft.

DELANO—S. A. Delzel's Vedder 1, 4-26-27, dr shale and shell 3640 ft.

EDISON—Midway-Northern Oil Co.'s Brown 1, 29-29-30, sr 3775 ft. Symark Oil Co.'s 1, 24-29-29, dr gray sand 910 ft.

GOULD HILLS—Bomka and Ball's Larson 1, 19-29-20, dr 2215 ft. Elmer Oil Co.'s 1, 2-29-20, dr 1465 ft. Exeter Oil Co.'s Pray 2, 1-29-29, produced 22 bbls oil on test, td 870 ft.

KERN RIVER—H. H. Bell's 1, 6-28-28, new lcn. Richfield's 1, 20-28-28, new lcn, rig completed.

RIO BRAVO—Elmer Oil Co.'s 1, 8-28-25, cmt fsh, td 5510 ft.

ROSEDALE—Elmer Oil Co.'s 1, 8-28-26, rig.

SHALE HILLS—No active tests in this district.

SAN EMIDIO—Standard's 1, 35-11-22, sdtr cas 2750 ft, td 3780 ft. Union's KCL-1, 5-10-21, dr hard sand 2325 ft.

SANTA BARBARA COUNTY

CARPENTERIA — Continental Oil Co.'s Franklin 1, heavy gas pressure at 4000 ft, hematite used, changing to steam outfit.

GOLETA—Elwood Consolidated Oil Co.'s Rekar 1, 8-4-29, coring 3315 ft, shale and streaks oil sand.

ORELLA—Shell's Rutherford 1, 36-5-31, dr 945 ft.

POINT ARQUELLO—Standard's Schyvers 1, dr shale 915 ft.

POINT CONCEPTION—Standard's Gerber 1, sp.

SANTA BARBARA—Channell Oil and Development Co.'s 1, 29-4-27, co 5100 ft, td 6300 ft.

SANTA MARIA—Shell's Union Sugar 1, 36-10-35, sr 1755 ft.

VENTURA COUNTY

CAMARILLO—American Oil Co.'s 1, 33-2-20, dr hard sand 783 ft.

CONEJO—Triunfo Oil Co.'s 1, 24-1-19, dr 465 ft.

FILLMORE—Federal Oil Co.'s 1, 5-3-19, changing to rotary, td 2950 ft. Frank Oil Co.'s 1, 35-4-20, rig. Sterling Supply Co.'s Elkins 1, 5-3-19, co 3975 ft.

OJAI—Continental's Fox 1-M, 21-4-22, dr shale 3516 ft; Thompson 1-A, 22-4-22, dr shell 4790 ft. Miley Oil Co.'s Casitas 2-A, co 800 ft. Rancho Riva Oil Co.'s 8, 28-4-23, fsh 260 ft.

PIRU—Bolsa Chica Oil Co.'s Snow 1, 4-4-18, dr 150 ft. Rio Grande Oil Co.'s B. B. N. 1, 13-4-19, co 2100 ft, td 2150 ft. Pacific Western Oil Co.'s 5, 3-4-28, re-dr 3010 ft, td 3240 ft. Wasibi Oil Co.'s Bishop 2, 34-5-19, dr shale 3015 ft.

SANTA PAULA—W. W. Bryant's 3, 21-4-21, 6½-in cas cmt 760 ft.

SATICOY—Standard's Citrus 5, 10-2-22, dr sand 4620 ft.

SIMI—Pirate Oil Co.'s 1, 33-3-21, rig. Shell's Marr 1, 31-3-17, coring shale 1600 ft.

SOUTH MOUNTAIN—Ring Pet. Corp.'s Converse 1, 23-3-21, trying to pump, td 4840 ft.

VENTURA—Star Pet. Co.'s Canet 1-A, 13-3-23, sd 6765 ft.

MISCELLANEOUS

FRESNO COUNTY—Fresno-Madera Syn.'s 1, 18-12-21, sr 4140 ft. Currency Pet. Co.'s 1, 28-21-14, dr gray sand 1200 ft. Huggins and Hornaday's 1, 32-14-18, sp.

KINGS COUNTY—Dudley Ridge Syn.'s 1, 12-23-19, dr 875 ft.

MONTEREY COUNTY—Shell's Dudley 1, 15-22-9, rigging rotary.

SAN LUIS OBISPO COUNTY—Dollar Oil Co.'s 1, 13-32-22, rigging rotary. North Star Oil Co.'s 1, 11-22-28, dr shale 2877 ft. Panorama Oil Co.'s 1, 7-31-21, dr shale 3430 ft. San Luis Syn's 1, 29-31-13, co 3100 ft. See Canyon Oil Co.'s 1, 18-31-12, dr sand 980 ft. Texas Pacific Coal and Oil Co.'s Dutton 1, 25-32-14, dr 550 ft. Union's Russ 1, 34-32-15, re-dr 3150 ft; Chandler 1, 12-32-15, dr shale 2865 ft.

TULARE COUNTY—Angiola Development Co.'s 1, 27-22-23, dr gray sand 3900 ft. Kings-Tulare Syn.'s Palmer 1, 10-21-23, perforating 10-in liner, td 5785 ft.

SOUTHERN CALIFORNIA

ATHENS—Burlingame Pet. Corp.'s Hamm 1, new lcn.

DOWNEY—Rio Grande Oil Co.'s Osborne 1, dr shale 3232 ft.

FULLERTON—Shell's Stein 1, fsh for liner, td 6300 ft.

GARDEN GROVE—The Texas Co.'s Crawford 1, dr hard sand and shale 3700 ft.

HUNTINGTON BEACH—Western Drilling and Producing Co.'s P. R. 1, fsh 4435 ft; Meyer 1, new lcn.

INGLEWOOD—California-Eastern Oil Co.'s Pollard 1, co 3740 ft. Stephens and McCluskey's 1, dr 600 ft. Ring Pet. Corp.'s Simons 1-A, 16-in cas cmt 480 ft.

LYNWOOD—Richfield's Vernon 1, dr shale 4100 ft.

NEWHALL—California-Eastern Oil Co.'s Hasley 1, will cmt 8¼-in cas at 3200 ft.

PUENTE—Richfield's Didier 1, 10-in cas cmt 3230 ft.

RIVERSIDE COUNTY — Hall Pet. Co.'s Watt 1, fsh 930 ft. Hemet Pet. Co.'s Ward 1, running packer to 1475 ft, td 3230 ft.

SAN BERNARDINO COUNTY—Mahala Oil and Gas Co.'s 1, co 4000 ft. Western Pacific Oil Co.'s No. 3, dr shale 3380 ft.

SAN DIEGO COUNTY—S. S. Turner's Baler 1, dr blue shale and hard sand 1600 ft, water shutoff.

IMPERIAL COUNTY—Imperial Valley Pet. Co.'s 1, 12¼-in cas cmt 1130 ft.

NORTH LOUISIANA

BOSSIER PARISH—Ark. Nat. Gas Corp., Tidwell 1, 29-22-11, sw 3462 ft.

BIENVILLE PARISH—W. P. Wallace's State, 1, 16-16-10, rig up.

BOSSIER PARISH—Ark. Nat. Gas Corp.'s Tidwell 1, 29-22-11, salt water abn td 3462 ft. Big Ben Oil Co.'s Stewart 2, 15-18-12, sd wo 1300 ft. Nell & Lanier's Biedenharn 1, 23-21-14, sd 50 ft. Walker et al's Antrim 1, 28-22-14, sd 2985 ft. John F. Woodman's Bolinger 1, 9-22-11, set 12½ in csg 300 ft. Magnolia Pet. Co.'s B. M. Cook 1, 2-22-11, dr 160 ft. Sallie Coyle 1, 2-22-11, dk.

CADDO PARISH—D. C. R. Oil Co.'s Hunter Est. 1, 17-19-14, fsgh rotary slip 930 ft.

CATAHOULA PARISH—Lochnager O. & G. Co.'s Taliaferro 1, 26-9-6e, sd 900 ft.

CLAIBORNE PARISH—Dixie Oil Co.'s Gilbert 1, 27-21-5w, sdtr ds 4939 ft td 5007 ft. Smitherman & McDonald's Miller 1, 17-23-8, tested dry 4335-76 ft, and at 4402 ft, coring 4452 ft. El Dorado Chief Oil Co.'s Baker 1, 26-20-7, reprg rig td 2092 ft.

DESOTO PARISH—Benedum & Trees' Nicholson 1, 2-15-14, dk. P. J. Becker's 1, 23-12-15, dk. Benson O. & G. Co.'s Jackson 1, 3-10-13, rig up. Luke Case, Tr's Boatright 1, 3-10-13, rebldg dk td 1810 ft. Carlton Drilling Co.'s Stephens 2, 12-11-16, dr 1880 ft. R. O. Roy's Sample 1, 1-13-14, dr 1350 ft. Thorn Oil Co.'s Burford 1, 22-14-14, dr 2630 ft. Warren & Carruthers' Ramsey 1, 33-13-16, dr 2800 ft. Benedum & Trees' Mahoney 1, 22-14-12 rig up

EAST CARROLL PARISH—Palmer Corp.'s Mitchner 1, 8--19-11e, dr rock 2655 ft.

FRANKLIN PARISH—Davis et al's Moore 1, 12-11-6e, dr shale 1428 ft.

GRANT PARISH—Carter & Collins' Ball Lbr. Co. 1, 29-7-1w, set 10 in csg 140 ft. Hardtner & Tannehill 1, 9-6-1w, dk.

LINCOLN—PARISH—V. E. Shaw's Voss 1, 1-20-3w, set 10 in csg 60 ft.

MOREHOUSE PARISH—Rainbow Oil Co.'s Louisville Cooperage 1, 33-22-8e, dk. Woodley & Collins' Harp 1, 22-22-7e, rig up.

NATCHITOCHES PARISH—Robeline O. & G. Co.'s Cassady 1, 7-9-8w, cored dry sand 2528ft.

OUACHITA PARISH—Ouachita Nat Gas Co.'s D'Arbonne B-2, 25-19-2e, sd 33-49 ft.

SKILLED SUPERVISION GUARANTEES THE QUALITY OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

GULF REFINING COMPANY

General Sales Offices

PITTSBURGH, PA.

District Sales Offices

New York Boston Philadelphia Louisville Atlanta Houston New Orleans

Ocean Terminals

Boston (Beverly), Mass.
Providence, R. I.
New York Harbor (Bayonne, N. J.)
Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Girard Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas
Galveston, Texas

Say you saw it in The OIL WEEKLY

Phillips et al's School Fee 1, 16-16-4e, dr 3085 ft.

RAPIDES PARISH—G. E. Silberston's Willemach 3, 13-5n-4w, sd 2250 ft. Glenmora Pet. Co.'s Fee 1, 1-2n-2w, sd 3850 ft.

RICHLAND PARISH—Richland Operating Co.'s Chapman 1, 19-16-7e, sd wo 2495 ft. S. C. Wilson's Buie 1, 17-15-7, rig up. Richland operating Co.'s S. R. Hemlar 1, 30-16-7e, lcn.

SABINE PARISH—W. J. Garnier's Bowman-Hicks 1, 16-7-12, sd 625 ft. R. L. Gay, Tr's Sabine Lbr. Co. 1, 13-7-14, bailed dry no show oil or gas 8 ft, limey sand arr to deepen td 2133 ft. Bowman-Hicks 2, 14-7-14, cored broken sand 1977-2006 ft, arr to set 8¼ in csg 1997 ft.

TENSAS PARISH—Enoch et al's Curry 1, 39-11-12e, sd 3583 ft.

UNION PARISH—G. E. Carmatte's Tugwell 2, 21-22-1e, sd repr rig td 1700 ft. Carter & Wingfield's Clark A-3, 8.23-1e,drk. Hudson 2, 7-23-1e, sd wo 2278 ft. Hudson 3, 7-23-1e, sd 2278 ft. Security Trust 2, 7-23-1e, lcn. H. C. McDonald's Union Sawmill 2, 18-23-1e, sd 1500 ft.

WEBSTER PARISH—Jones et al's Elkins 1, 33-23-9, temp abn 2690 ft. J. W. Clark, Tr's Mayfield 2, 20-23-9, rig up. Magnolia Pet Co.'s H. H. Branton 3, 6-22-9, dr 2275 ft. Denman 1, 1-22-11, dr shale 2590 ft. Atkins 1, 4-22-9, lcn. Harry Morris' Lewis, 1, 15-23-9, sd wo 2902 ft. John F. Woodman's Boyd 1, 3-22-11, dk.

ARKANSAS

Completions

BRADLEY COUNTY—
Ohio Oil Co., Southern Lbr. Co. 2, 19-16-9 ..... * 3217

UNION COUNTY—
Sam Sklar, Tr., Fitzgerald 10, 8-18-15 10 2190

ASHLEY COUNTY—Atlantic O. P. Co.'s Bledsoe 1, 20-15-7, rig up, resume dr 2554 ft, (formerly owned by Rhodes et al) Texas Co.'s Keiffer 1, 11-18-4, dr gbo 2525 ft.

BRADLEY COUNTY — Ohio Oil Co.'s Southern Lbr. Co. 2, 19-16-9, dry abn, td 3217 ft.

CALHOUN COUNTY—Joe Hurley's Ark. Land & Timber 1, 29-16-12, cmt 6⅝ cas 2303 ft, td 2314 ft.

CLARK COUNTY—Wm. Henry, Tr.'s Clark 1, 34-9-21, sd 1385 ft.

CHICOT COUNTY—W. S. Smith's Meyer 1, 14-19-2, sd wo 850 ft. Joe Crawford's Cashion 1, 14-18-2, d s stuck td 2330 ft.

COLUMBIA COUNTY—G. W. Dawley et al's Fullenwider & Kitchen 1, 12-17-22, sd wo 2847 ft.

DALLAS COUNTY—Robt. H. Dedman's Hillman 1, 20-10-13, temp abn td 1145 ft.

DREW COUNTY—Ohio Oil Co.'s Jerome Lbr. Co. 1, 13-15-4, cmt 12½-in cas 350 ft.

FAULKNER COUNTY—Gold Creek O. & G. Co.'s Stermer 1, 17-4-13, temp abn td 3462 ft.

FRANKLIN COUNTY—Ozark Nat. Gas Co.'s McElroy 1, 15-8-27, lcn.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-13-19w, fsh cable tools td 2800 ft.

JOHNSON COUNTY—Ark. Nat. Gas Corp. Bynum 2, 12-10-24, dr 1250 ft. McPherson 1, 10-10-24, sr to set 10-in cas, td 1575 ft.

LOGAN COUNTY—Ark. Nat. Gas Corp.'s W. H. Parks 1, 26-8-24, ur 6⅝-in cas 3400 ft, td 3609 ft.

MILLER COUNTY—E. A. Martin, Tr's Dale 4, 23-15-26, sd 3000 ft.

OUACHITA COUNTY—Little Fay Oil Co.'s Primm A-1, 24-15-16, dr 1500 ft. Chas. McDonald's Wilson 1, 25-15-18, dr 2230 ft. McDonald Bros.' Wilson 1, 25-15-18, cmt 6⅝-in cas 2794 ft, td 2818 ft. Flaucher et al's Bucks 1, 7-15-17, drk.

UNION COUNTY—Frank Foster et al's McDonald 1, 11-17-18, cmt 12½-in cas 113 ft; Murphy Land Co. 1, 22-17-17, sd 1400 ft. J. O. Moore's Tr's Union Sawmill 1, 11-18-12, dr 40 ft. Carter Bell et al's Terrell 1, 27-18-14, dr 2004 ft. Calgo Oil Co.'s Primm 1, 9-18-17, dr 3990 ft. Sam Sklar, Tr's Fitzgerald 10, 8-18-15, pumping 10 bbls 48 ft br formation, td 2190 ft. J. P. Hawkins et al's Goodwin 1, 6-17-15, sd wo 1204 ft. Tharpe Drilling Co.'s List 1, 25-17-15, sd wo 3050 ft. McDonald Bros. Mayfield 1, 29-19-15, sd wo 1990 ft. Frazier et al's Laney 1, 30-19-16, drk pat. Grimes Bros.' Hill 2, 7-18-14, rig up. J. C. Marcum's DeYambert 1, 5-19-4, dr 2920 ft. Gulf Ref. Co.'s Gaddy 2, 30-17-14, dr 2790 ft. T. J. Woodley 1, 6-18-14, dr 332 ft.

MOUNTAIN STATES

WYOMING

BIG HORN—Utah Southern Oil Co., 3, 26-56n-87w, 15M gas well at 3763 ft. P. & R., 3, 24-56-98, sd 2708 ft. Prairie O. & G. Co., Chilcote 1, 35-56n-95w, sd 2580 ft. P. & R. South Frannie 1, 7-57-97, showing saturation at 1700 ft. J. E. Scanlon et al., 1, 19-51n, 92w, try. form. so at 2600 ft.

CARBON—P. & R., O'Brien Springs 7, 12-24-88, compl at 450 ft. This was a diamond drill test.

FREMONT—P. & R. Muskrat 2, nw 1-33n-92k, location. Gates & Holman, 6-33-94, spdg. Kinney-Coastal 1, 22-3-n-1w, spudding.

HOT SPRINGS—Texas Prod. Co., sw 23-45n-100w, 1150 ft., nearing a sand.

LINCOLN—Midwest Refining Co., Waterfall 1, 35-22-115, dr 2425 ft.

PARK—California Exploration Co. and P. & R., Pitchfork 1, 12-48n-102w, cem 20-in. at 225 ft. Midwest, Rosenburg 36, 25-58-98, dr 370 ft. Midwest, Kirk 1, se 23-58-98w, dr 1365 ft. Cody Pete Co., 1, ne 4-51n-102w, dr 2400 ft. Oregon-Wyoming Oil Co., 30-52-n-101w, set 6⅝-in. at 1030 ft.

SWEETWATER—Prairie O. & G. Co., Tucker 1, 18-13-99, sd for winter, 2480 ft. Ohio Oil Co., Humphreys 1, 2-12-101, dr. bel 2175 ft.

SUBLETTE—California Co., Wyss 1, 12-32n-115w, sd 1283 ft. California Co., Buchell 1, 11-29-115, ur 2503 ft.

UNITA—California Co., U. P. I. 1, 7-17-116w, dr 2589 ft.

COLORADO

ARCHULETA—Juanita Oil Co., Harvey 1, sw 4-32n-3w, stand 725 ft., due to bad weather.

BENT—Marland Oil Co., Pipe Springs 1, se 37-29s-49w, sd for winter 3987 ft.

JACKSON—Producers & Refiners, State 1, ne 2-6n-81w ,sd for winter at 1900 ft.

JEFFERSON—Ruby Hill O. & G. Co., Braden 1, se 14-4s-69w, dr 821 ft.

LAS ANIMAS—Parker Club, Kinney-Coastal 1, se 4-28s-68w, stand. cem 1350 ft. Oklahoma-standColorado O. & G. Co., Doherty 1, sw 32-34-60w, dr 555 ft.

LARIMER—Barrows et al, 7-in-6Tw, carry, 6¼-inch at 1967 ft.

La PLATA—Foyal J. & R., Red Mesa 1, 27-33n-12w, sd 650 ft, bad roads.

LINCOLN—Kelly Oil Co., State 1, ne 36-14s-57w, deepened to 1540 ft., oil and gas showing.

MESA—Peerless Oil Co., Hoel 1, ne 23-8s-104, td 2058 ft., water line frozen.

MORGAN—Badger Creek O. & G. Co., Kent 1, sw 2-50n-10, sd 800 ft.

MOFFAT—Ohio Oil Co., State 1, 16-12-100, dr 3340 ft. Alliance Co., Milliken 1, 14-4n-92w, susp 3575 ft. McLaughlin et al., Wms. 1, 2-3n-91w, dr 2805 Ft. McCormick et al., sales 2, se 28-4n-92w, spd to 15 ft. and sd for winter.

MONTROSE—Uncomphhgre O. & G. Co., Colorado Title & Trust Co., 1, 27-50n-10w, sd 1470 ft.

PUEBLO—Rozella Oil Co., Shaw 1, nw 3-22s-63w, stand. 1190 ft., 700 ft. oil in the hole.

RIO BLANCO—White Eagle O. & R. Co., Fordham 1, sw 9-2s-86w, dr 519 ft.

YUMA—Etnyre Synd., sw 7-2s-43, dr 1475 ft., hole caving badly.

WELD—Platte Valley Pete Corp., Patterson 1, sw 26-6n-61w, sd 4180 ft.

MONTANA

(The severity of the Montana winter has forced the shutdowns of almost all operations in the state.) ¶

BLAINE—Ohio Oil Co., Winngert 1, 3-34n-32e, dr 2700 ft.

CARBON—Ohio Oil Co., Northern Pacific 1, 11,7s-21e, fsg tools 4558 ft.

CHOTEAU—Geraldine O. & G. Co., ne 1-21-11e, no report.

GALLATIN—California Co., Ringling 1, 35-5n-7e, dr out bridge 600 ft.

TETON—Texas Pacific, 12-22-1w, sd 615 ft for the winter.

NEW MEXICO

CHAVES—Snowden & McSweeney, Merchant 1, ne 27-15s-23e, dr 3576 ft. R. E. Neal et al., Russel 1, 21-14-25e, dr 1107 ft. Warman et al., 1, sw 23-13s-24e, stand 251 ft. Tanehill et al., Butler 1, se 15-12s-24e, spdg 135 ft. Transcontinental, Robert 1, 1-14s-28e, ready to spud.

DeBACA—Matador Oil Co., State 1, sw 6-4n-20e, straight hole 630 ft., McAdoo 1, ne 16-1s-27e, ready to resume, td 4190 ft. Transcontinental, McWhorter 1, 6-35-22e, dr 3095 ft.

GUADALUPE—Hanchett Oil Co., 2, 14-8n-24e, dr 1205 ft.

LEA—Midwest, Capps 31, sw 3-19s-28e, stand ready. Midwest, Farnsworth 19, 12-26-37e, dr by bit at 3900 ft. Midwest, Farnsworth 13C, 13-26-36e, 12½-in. cem 1315 ft. Marland, Lynn 1, 26-23-36, show 40M 3730 ft. Marland Reed 1, 22-20s-36e, dr 3035 ft. Marland, Meyers 1, 29-20s-36e, dr 3000 ft. Marland, Lockhart 1, 31-21s-36e, show 3815 ft. Gypsy Oil Co., Mattern 1, 24-21s-36e, 15¼-in. cem at 595 ft. Exploration Co., Record 1, 26-19s-35e, td 4556 ft. Morton et al., State 1, ne 32-11s-38e, stand. 1112 ft. Texas, Lynch 1, se 34-20-34, td 1120 ft. Texas, Sheppard 1, ne 6-26s-37e, spray oil at 3230 ft., tools lost. Texas, Humphreys 1, nw 18-20s-32e, location. Texas, Moberly 1, se 17-26s-37e, dr 3453 ft. Curtis Dr Co., Nixon 1, 22-18s-34e, sd 1150 ft. Cranfill & Reynolds, Wilson 1, ne 23-25s-36e, prep to spud. Skelly Oil Co., Joiner 1, se 26-25s-36e, estimated 2000 bbl. showing at 3350 ft. Hill & Abel, Maechtel 1, sw 5-26s-33e, fsg 4842 ft. Maljamar O. & G. Corp., Pearsall 2, 30-17s-32e, dr 4225 ft. Empire Gas & Fuel Co., State 1A, nw 12-21s-34e, dr 3610 ft. Texas Pacific Coal & Oil Co., State 1, sw 22-23s-35e, dr at 1370 ft. Prairie O. & G. Co., Slattery 1, ne 22-22s-34e, ready to spud. Henderson et al., McDonald 1, se 18-20s-34e, dr 1500 ft. Vacuum Oil Co., 1, 14-17-34, ready to spud.

McKINLEY—J. W. Halsell, Santa Fe 1, 17-18n-9w, dr 925 ft.

ROOSEVELT—J. T. Keegan et al., Pepper 1, 6-1s-36e, rig up. Smith & Sloan, Lovern 1, se 4-3s-35e, prep to spud.

SAN JUAN—Continental Oil Co., Munoz 17, 2-29-19, dr 6348 ft. Dorothy Oil Co., 29-30-9, sd 712 ft., making repairs. Huerfano Oil Co., Wiltbank 1, 25-29-11, td 800 ft. San Juan Pete Co. 1, 9-29-13, sd 2950 ft. Kirtland Dr. Co., Hunt 1, 10-29-15, td 450 ft. Kutz Canon O. & G. Co., Day 1, 29-28-11, cas. trouble, td 675 ft. Blackrock Oil Co., 1, sw 11-25s-13w, sd temp 1550 ft. Iowa Oil Synd., Viles 2, 28-29-11, recem at 830 ft. Angel Peaks Oil Co., Kutz Canon 1, 11-28n-11w, show. 1½M gas 1850 ft. Great Mesa Oil Corp., Roderick 1, sw 11-22n-1-14w, dr 215 ft. Milwaukee-N. M. Synd., Beardsley 1, 30-28-11w, sd 1100ft. Childers D. & P. Co., Westwater 2, nw 24-31-16w, dr 2020 ft.

SAN MIGUEL—E. Adams et al., Deason 1, 14-15n-16e, sd 1235 ft. Benedict-Wilson 1, ne 25-17n,16e, sd 800 ft.

SOCORRO—Arnold et al., 2, ne 13-63-10w, run 6⅝-in. at 1400 ft.

TORRANCE—Bluhall O. & G. Co., 20-6n-10e, dr 1545 ft. Hall et al., Pines Wells 1, sw 25-3n-13e, stand 400 ft. Sinnock et al., Kutchin 1, ne 13-7n-7e, spd 100 ft.

VALENCIA—Rio Puerco Oil Co., N. M.-Ariz Land Co., 2, nw 13-6n-2w, wait pipe 3145 ft. Acme Oil Co., N. M.- Ariz. Land Co., 1, 26-6n-9w, ur 6⅝-in., td 3650 ft.

UTAH

(Most of the operations in Utah are making little or no progress because of the severity of the winter.)

GRAND COUNTY—Utah Southern, Salt Valley 1, 13-23-21, will deepen from 3001 ft. when No. 1A Shafer is completed. Utah Southern, Shafer 1A, 36-36-20, sd 2700 ft.

DUCHESNE—Utah Southern Oil Co., Farnsworth 1, 29-4-1, dr 2880 ft.

WAYNE—Phillips Pete Corp., 1, 16-27-16, fsg 4575 ft.

TEXAS GULF COAST

Completions

Company, Well and Location	Initial Production Bbls.	Depth
REFUGIO—		
Houston Gulf Gas Co., Lambert 1, n end field	*	5211
MARKHAM—		
Rycade, Hudson-Humble 4	*	3581
CLAY CREEK DOME—		
Sun Oil Co., H. Witte 1.....	4000	1250

AUSTIN COUNTY—Humble's R. Dietrich 2, Raccoon Bend, ru; Hardy 2, Raccoon Bend, Sherrill 1, Raccoon Bend, dr 814 ft, shale and lime; J. C. Walton 2, Raccoon Bend, set 6⅝

GARDNER 14½x7¼x20

MASSIVE STRENGTH for the HARDEST SERVICE

The massive construction of the world's largest mud pump gives it strength to stand up through the hard usage encountered in drilling big, deep holes at maximum speed. Ask for bulletins explaining the performance, durability and efficiency of the Gardner 14½ x 7¼ x 20-inch Steam Driven Booster Pump.

GARDNER-DENVER COMPANY
QUINCY, ILL.

BRANCHES IN OIL FIELDS:

DALLAS	HOUSTON	SAN FRANCISCO	NEW YORK	PHILADELPHIA
DENVER	LOS ANGELES	TULSA	CHICAGO	LONDON, ENGLAND

OIL COUNTRY DISTRIBUTORS:

Atlas Supply Company...Muskogee, Tulsa and Ft. Worth
C. F. Camp Co.....Tulsa
Emsco Derrick & Equipment Co....6811 So. Alameda St., Los Angeles
Haywood-Williamson.....Shreveport and El Dorado
International Supply Company.....Stores in all Principal Mid-Continent Fields
Norvell-Wilder Hdwe. Co.....Beaumont, Houston and Fort Worth.
The Republic Supply Co. of Calif.....Stores in all Principal California Oil Fields

GARDNER-DENVER

Say you saw it in The OIL WEEKLY

Phillips et al's School Fee 1, 16-16-4e, dr 3085 ft.

RAPIDES PARISH—G. E. Silberston's Willemach 3, 13-5n-4w, sd 2250 ft. Glenmora Pet. Co.'s Fee 1, 1-2n-2w, sd 3850 ft.

RICHLAND PARISH—Richland Operating Co.'s Chapman 1, 19-16-7e, sd wo 2495 ft. S. C. Wilson's Buie 1, 17-15-7, rig up. Richland operating Co.'s S. R. Hemlar 1, 30-16-7e, lcn.

SABINE PARISH—W. J. Garnier's Bowman-Hicks 1, 16-7-12, sd 625 ft. R. L. Gay, Tr's Sabine Lbr. Co. 1, 13-7-14, bailed dry no show oil or gas 8 ft, limey sand arr to deepen td 2133 ft. Bowman-Hicks 2, 14-7-14, cored broken sand 1977-2006 ft, arr to set 8¼ in csg 1997 ft.

TENSAS PARISH—Enoch et al's Curry 1, 39-11-12e, sd 3583 ft.

UNION PARISH—G. E. Carmatte's Tugwell 2, 21-22-1e, sd repr rig td 1700 ft. Carter & Wingfield's Clark A-3, 8.23-1e,drk. Hudson 2, 7-23-1e, sd wo 2278 ft. Hudson 3, 7-23-1e, sd 2278 ft. Security Trust 2, 7-23-1e, lcn. H. C. McDonald's Union Sawmill 2, 18-23-1e, sd 1500 ft.

WEBSTER PARISH—Jones et al's Elkins 1, 33-23-9, temp abn 2690 ft. J. W. Clark, Tr's Mayfield 2, 20-23-9, rig up. Magnolia Pet Co.'s H. H. Branton 3, 6-22-9, dr 2275 ft. Denman 1, 1-22-11, dr shale 2590 ft. Atkins 1, 4-22-9, lcn. Harry Morris' Lewis, 1, 15-23-9, sd wo 2902 ft. John F. Woodman's Boyd 1, 3-22-11, dk.

ARKANSAS

Completions

BRADLEY COUNTY—
Ohio Oil Co., Southern Lbr. Co. 2, 19-16-9 ..... * 3217

UNION COUNTY—
Sam Sklar, Tr., Fitzgerald 10, 8-18-15 10 2190

ASHLEY COUNTY—Atlantic O. P. Co.'s Bledsoe 1, 20-15-7, rig up, resume dr 2554 ft, (formerly owned by Rhodes et al) Texas Co.'s Keiffer 1, 11-18-4, dr gbo 2525 ft.

BRADLEY COUNTY — Ohio Oil Co.'s Southern Lbr. Co. 2, 19-16-9, dry abn, td 3217 ft.

CALHOUN COUNTY—Joe Hurley's Ark. Land & Timber 1, 29-16-12, cmt 6⅝ cas 2303 ft, td 2314 ft.

CLARK COUNTY—Wm. Henry, Tr.'s Clark 1, 34-9-21, sd 1385 ft.

CHICOT COUNTY—W. S. Smith's Meyer 1, 14-19-2, sd wo 850 ft. Joe Crawford's Cashion 1, 14-18-2, d s stuck td 2330 ft.

COLUMBIA COUNTY—G. W. Dawley et al's Fullenwider & Kitchen 1, 12-17-22, sd wo 2847 ft.

DALLAS COUNTY—Robt. H. Dedman's Hillman 1, 20-10-13, temp abn td 1145 ft.

DREW COUNTY—Ohio Oil Co.'s Jerome Lbr. Co. 1, 13-15-4, cmt 12½-in cas 350 ft.

FAULKNER COUNTY—Gold Creek O. & G. Co.'s Stermer 1, 17-4-13, temp abn td 3462 ft.

FRANKLIN COUNTY—Ozark Nat. Gas Co.'s McElroy 1, 15-8-27, lcn.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-13-19w, fsh cable tools td 2800 ft.

JOHNSON COUNTY—Ark. Nat. Gas Corp. Bynum 2, 12-10-24, dr 1250 ft. McPherson 1, 10-10-24, sr to set 10-in cas, td 1575 ft.

LOGAN COUNTY—Ark. Nat. Gas Corp.'s W. H. Parks 1, 26-8-24, ur 6⅝-in cas 3400 ft, td 3609 ft.

MILLER COUNTY—E. A. Martin, Tr's Dale 4, 23-15-26, sd 3000 ft.

OUACHITA COUNTY—Little Fay Oil Co.'s Primm A-1, 24-15-16, dr 1500 ft. Chas. McDonald's Wilson 1, 25-15-18, dr 2230 ft. McDonald Bros.' Wilson 1, 25-15-18, cmt 6⅝-in cas 2794 ft, td 2818 ft. Flaucher et al's Bucks 1, 7-15-17, drk.

UNION COUNTY—Frank Foster et al's McDonald 1, 11-17-18, cmt 12½-in cas 113 ft; Murphy Land Co. 1, 22-17-17, sd 1400 ft. J. O. Moore's Tr's Union Sawmill 1, 11-18-12, dr 40 ft. Carter Bell et al's Terrell 1, 27-18-14, dr 2004 ft. Calgo Oil Co.'s Primm 1, 9-18-17, dr 3990 ft. Sam Sklar, Tr's Fitzgerald 10, 8-18-15, pumping 10 bbls 48 ft br formation, td 2190 ft. J. P. Hawkins et al's Goodwin 1, 6-17-15, sd wo 1204 ft. Tharpe Drilling Co.'s List 1, 25-17-15, sd wo 3050 ft. McDonald Bros. Mayfield 1, 29-19-15, sd wo 1990 ft. Frazier et al's Laney 1, 30-19-16, drk pat. Grimes Bros.' Hill 2, 7-18-14, rig up. J. C. Marcum's DeYambert 1, 5-19-4, dr 2920 ft. Gulf Ref. Co.'s Gaddy 2, 30-17-14, dr 2790 ft. T. J. Woodley 1, 6-18-14, dr 332 ft.

MOUNTAIN STATES

WYOMING

BIG HORN—Utah Southern Oil Co., 3, 26-56n-87w, 15M gas well at 3763 ft. P. & R., 3, 24-56-98, sd 2708 ft. Prairie O. & G. Co., Chilcote 1, 35-56n-95w, sd 2580 ft. P. & R. South Frannie 1, 7-57-97, showing saturation at 1700 ft. J. E. Scanlon et al., 1, 19-51n, 92w, try. form. so at 2600 ft.

CARBON—P. & R., O'Brien Springs 7, 12-24-88, compl at 450 ft. This was a diamond drill test.

FREMONT—P. & R. Muskrat 2, nw 1-33n-92k, location. Gates & Holman, 6-33-94, spdg. Kinney-Coastal 1, 22-3-n-1w, spudding.

HOT SPRINGS—Texas Prod. Co., sw 23-45n-100w, 1150 ft., nearing a sand.

LINCOLN—Midwest Refining Co., Waterfall 1, 35-22-115, dr 2425 ft.

PARK—California Exploration Co. and P. & R., Pitchfork 1, 12-48n-102w, cem 20-in. at 225 ft. Midwest, Rosenburg 36, 25-58-98, dr 370 ft. Midwest, Kirk 1, se 23-58-98w, dr 1365 ft. Cody Pete Co., 1, ne 4-51n-102w, dr 2400 ft. Oregon-Wyoming Oil Co., 30-52-n-101w, set 6⅝-in. at 1030 ft.

SWEETWATER—Prairie O. & G. Co., Tucker 1, 18-13-99, sd for winter, 2480 ft. Ohio Oil Co., Humphreys 1, 2-12-101, dr. bel 2175 ft.

SUBLETTE—California Co., Wyss 1, 12-32n-115w, sd 1283 ft. California Co., Buchell 1, 11-29-115, ur 2503 ft.

UNITA—California Co., U. P. I. 1, 7-17-116w, dr 2589 ft.

COLORADO

ARCHULETA—Juanita Oil Co., Harvey 1, sw 4-32n-3w, stand 725 ft., due to bad weather.

BENT—Marland Oil Co., Pipe Springs 1, se 37-29s-49w, sd for winter 3987 ft.

JACKSON—Producers & Refiners, State 1, ne 2-6n-81w ,sd for winter at 1900 ft.

JEFFERSON—Ruby Hill O. & G. Co., Braden 1, se 14-4s-69w, dr 821 ft.

LAS ANIMAS—Parker Club, Kinney-Coastal 1, se 4-28s-68w, stand. cem 1350 ft. Oklahoma-standColorado O. & G. Co., Doherty 1, sw 32-34-60w, dr 555 ft.

LARIMER—Barrows et al, 7-in-6Tw, carry, 6¼-inch at 1967 ft.

La PLATA—Foyal J. & R., Red Mesa 1, 27-33n-12w, sd 650 ft, bad roads.

LINCOLN—Kelly Oil Co., State 1, ne 36-14s-57w, deepened to 1540 ft., oil and gas showing.

MESA—Peerless Oil Co., Hoel 1, ne 23-8s-104, td 2058 ft., water line frozen.

MORGAN—Badger Creek O. & G. Co., Kent 1, sw 2-50n-10, sd 800 ft.

MOFFAT—Ohio Oil Co., State 1, 16-12-100, dr 3340 ft. Alliance Co., Milliken 1, 14-4n-92w, susp 3575 ft. McLaughlin et al., Wms. 1, 2-3n-91w, dr 2805 Ft. McCormick et al., sales 2, se 28-4n-92w, spd to 15 ft. and sd for winter.

MONTROSE—Uncomphhgre O. & G. Co., Colorado Title & Trust Co., 1, 27-50n-10w, sd 1470 ft.

PUEBLO—Rozella Oil Co., Shaw 1, nw 3-22s-63w, stand. 1190 ft., 700 ft. oil in the hole.

RIO BLANCO—White Eagle O. & R. Co., Fordham 1, sw 9-2s-86w, dr 519 ft.

YUMA—Etnyre Synd., sw 7-2s-43, dr 1475 ft., hole caving badly.

WELD—Platte Valley Pete Corp., Patterson 1, sw 26-6n-61w, sd 4180 ft.

MONTANA

(The severity of the Montana winter has forced the shutdowns of almost all operations in the state.) ¶

BLAINE—Ohio Oil Co., Winngert 1, 3-34n-32e, dr 2700 ft.

CARBON—Ohio Oil Co., Northern Pacific 1, 11,7s-21e, fsg tools 4558 ft.

CHOTEAU—Geraldine O. & G. Co., ne 1-21-11e, no report.

GALLATIN—California Co., Ringling 1, 35-5n-7e, dr out bridge 600 ft.

TETON—Texas Pacific, 12-22-1w, sd 615 ft for the winter.

NEW MEXICO

CHAVES—Snowden & McSweeney, Merchant 1, ne 27-15s-23e, dr 3576 ft. R. E. Neal et al., Russel 1, 21-14-25e, dr 1107 ft. Warman et al., 1, sw 23-13s-24e, stand 251 ft. Tanehill et al., Butler 1, se 15-12s-24e, spdg 135 ft. Transcontinental, Robert 1, 1-14s-28e, ready to spud.

DeBACA—Matador Oil Co., State 1, sw 6-4n-20e, straight hole 630 ft., McAdoo 1, ne 16-1s-27e, ready to resume, td 4190 ft. Transcontinental, McWhorter 1, 6-35-22e, dr 3095 ft.

GUADALUPE—Hanchett Oil Co., 2, 14-8n-24e, dr 1205 ft.

LEA—Midwest, Capps 31, sw 3-19s-28e, stand ready. Midwest, Farnsworth 19, 12-26-37e, dr by bit at 3900 ft. Midwest, Farnsworth 13C, 13-26-36e, 12½-in. cem 1315 ft. Marland, Lynn 1, 26-23-36, show 40M 3730 ft. Marland Reed 1, 22-20s-36e, dr 3035 ft. Marland, Meyers 1, 29-20s-36e, dr 3000 ft. Marland, Lockhart 1, 31-21s-36e, show 3815 ft. Gypsy Oil Co., Mattern 1, 24-21s-36e, 15¼-in. cem at 595 ft. Exploration Co., Record 1, 26-19s-35e, td 4556 ft. Morton et al., State 1, ne 32-11s-38e, stand. 1112 ft. Texas, Lynch 1, se 34-20-34, td 1120 ft. Texas, Sheppard 1, ne 6-26s-37e, spray oil at 3230 ft., tools lost. Texas, Humphreys 1, nw 18-20s-32e, location. Texas, Moberly 1, se 17-26s-37e, dr 3453 ft. Curtis Dr Co., Nixon 1, 22-18s-34e, sd 1150 ft. Cranfill & Reynolds, Wilson 1, ne 23-25s-36e, prep to spud. Skelly Oil Co., Joiner 1, se 26-25s-36e, estimated 2000 bbl. showing at 3350 ft. Hill & Abel, Maechtel 1, sw 5-26s-33e, fsg 4842 ft. Maljamar O. & G. Corp., Pearsall 2, 30-17s-32e, dr 4225 ft. Empire Gas & Fuel Co., State 1A, nw 12-21s-34e, dr 3610 ft. Texas Pacific Coal & Oil Co., State 1, sw 22-23s-35e, dr at 1370 ft. Prairie O. & G. Co., Slattery 1, ne 22-22s-34e, ready to spud. Henderson et al., McDonald 1, se 18-20s-34e, dr 1500 ft. Vacuum Oil Co., 1, 14-17-34, ready to spud.

McKINLEY—J. W. Halsell, Santa Fe 1, 17-18n-9w, dr 925 ft.

ROOSEVELT—J. T. Keegan et al., Pepper 1, 6-1s-36e, rig up. Smith & Sloan, Lovern 1, se 4-3s-35e, prep to spud.

SAN JUAN—Continental Oil Co., Munoz 17, 2-29-19, dr 6348 ft. Dorothy Oil Co., 29-30-9, sd 712 ft., making repairs. Huerfano Oil Co., Wiltbank 1, 25-29-11, td 800 ft. San Juan Pete Co. 1, 9-29-13, sd 2950 ft. Kirtland Dr. Co., Hunt 1, 10-29-15, td 450 ft. Kutz Canon O. & G. Co., Day 1, 29-28-11, cas. trouble, td 675 ft. Blackrock Oil Co., 1, sw 11-25s-13w, sd temp 1550 ft. Iowa Oil Synd., Viles 2, 28-29-11, recem at 830 ft. Angel Peaks Oil Co., Kutz Canon 1, 11-28n-11w, show. 1½M gas 1850 ft. Great Mesa Oil Corp., Roderick 1, sw 11-22n-1-14w, dr 215 ft. Milwaukee-N. M. Synd., Beardsley 1, 30-28-11w, sd 1100ft. Childers D. & P. Co., Westwater 2, nw 24-31-16w, dr 2020 ft.

SAN MIGUEL—E. Adams et al., Deason 1, 14-15n-16e, sd 1235 ft. Benedict-Wilson 1, ne 25-17n,16e, sd 800 ft.

SOCORRO—Arnold et al., 2, ne 13-63-10w, run 6⅝-in. at 1400 ft.

TORRANCE—Bluhall O. & G. Co., 20-6n-10e, dr 1545 ft. Hall et al., Pines Wells 1, sw 25-3n-13e, stand 400 ft. Sinnock et al., Kutchin 1, ne 13-7n-7e, spd 100 ft.

VALENCIA—Rio Puerco Oil Co., N. M.-Ariz Land Co., 2, nw 13-6n-2w, wait pipe 3145 ft. Acme Oil Co., N. M.- Ariz. Land Co., 1, 26-6n-9w, ur 6⅝-in., td 3650 ft.

UTAH

(Most of the operations in Utah are making little or no progress because of the severity of the winter.)

GRAND COUNTY—Utah Southern, Salt Valley 1, 13-23-21, will deepen from 3001 ft. when No. 1A Shafer is completed. Utah Southern, Shafer 1A, 36-36-20, sd 2700 ft.

DUCHESNE—Utah Southern Oil Co., Farnsworth 1, 29-4-1, dr 2880 ft.

WAYNE—Phillips Pete Corp., 1, 16-27-16, fsg 4575 ft.

TEXAS GULF COAST

Completions

Company, Well and Location	Initial Production Bbls.	Depth
REFUGIO—		
Houston Gulf Gas Co., Lambert 1, n end field	*	5211
MARKHAM—		
Rycade, Hudson-Humble 4	*	3581
CLAY CREEK DOME—		
Sun Oil Co., H. Witte 1.....	4000	1250

AUSTIN COUNTY—Humble's R. Dietrich 2, Raccoon Bend, ru; Hardy 2, Raccoon Bend, Sherrill 1, Raccoon Bend, dr 814 ft, shale and lime; J. C. Walton 2, Raccoon Bend, set 6⅝

GARDNER 14½x7¼x20

MASSIVE STRENGTH for the HARDEST SERVICE

The massive construction of the world's largest mud pump gives it strength to stand up through the hard usage encountered in drilling big, deep holes at maximum speed. Ask for bulletins explaining the performance, durability and efficiency of the Gardner 14½ x 7¼ x 20-inch Steam Driven Booster Pump.

GARDNER-DENVER COMPANY
QUINCY, ILL.

BRANCHES IN OIL FIELDS:

DALLAS	HOUSTON	SAN FRANCISCO	NEW YORK	PHILADELPHIA
DENVER	LOS ANGELES	TULSA	CHICAGO	LONDON, ENGLAND

OIL COUNTRY DISTRIBUTORS:

Atlas Supply Company...Muskogee, Tulsa and Ft. Worth
C. F. Camp Co.....Tulsa
Emsco Derrick & Equipment Co....6811 So. Alameda St., Los Angeles
Haywood-Williamson.....Shreveport and El Dorado
International Supply Company.....Stores in all Principal Mid-Continent Fields
Norvell-Wilder Hdwe. Co.....Beaumont, Houston and Fort Worth.
The Republic Supply Co. of Calif.....Stores in all Principal California Oil Fields

GARDNER-DENVER

Say you saw it in The OIL WEEKLY

cas at 3272 ft; Urban 2, Raccoon Bend, ready for rig, td 3227ft; Urban 3, Raccoon Bend dr 1131 ft, shale and lime; Roy Thompson 3, Raccoon Bend, ru; J. W. Wilson 1, Raccoon Bend, dr 1027 ft, shale; E. Kearns 2, Raccoon Bend, dr 1005 ft, sandy shale; E. B. Wilson 3, Raccoon Bend, ru; E. Ueckert 1, Raccoon Bend, dr 769 ft; Sanders 2, Raccoon Bend, drk.

BRAZORIA COUNTY—Meyer et al's Davidson 2, Clemens Dome, lcn. Shell Pet. Corp's Allen 5, Allen Dome, cor shale at 4724 ft; Reese 3, Allen dome, cor sand showing oil at 3854 ft; Randon 1, Allen dome, preparing to abn. Empire G. & F. Co.'s Brock 2, Stratton Ridge, dr 3120 ft, sand and shale.

CALHOUN COUNTY—Baker & Thompson's Thomas 1, 9 mi w Pt. Lavaca, td 2390 ft.

CHAMBERS COUNTY—Pure Oil Co.'s Mayes 1 Lost Lake, dr 1207 ft, lime; Lost Lake 2, dr 3486 ft, sand and shale. Guff's Wilborn 1, Hankamer, dr 4185 ft, gbo. Mills Bennett Prod. Co.'s Smith 2, Barbers Hill, e side, drk; Kirby 2, Barbers Hill, e side, dr 5622 ft, hard sand. Mills Bennett-Republic Prod. Co.'s Means 1, Barbers Hill, e side, dr 3230 ft, shale and lime. Humphreys Corp's Barber 1, Barbers Hill, e side, set cas at 4881 ft, td 4949 ft, preparing to test oil sand; Kirby B-6, Barbers Hill, e side, prep to test oil sand at 5771-5808 ft. Mike Kouri's Shaw 1, Barbers Hill, e side, dr 1200 ft. Joe Bashara's Tarbutton 1, Barbers Hill, e side, td 4747 ft, pulled drk in. Gulf's Fisher 1, Barbers Hill, sw side, ru. Sun Oil Co.'s Chambers County Agricultural Co. 1, Barbers Hill, sw side, ru. Cedar Bayou Oil Co.'s Fitzgerald 1, Barbers Hill, sw side, dr 298 ft. Yount-Lee Oil Co.'s Chambers Co. Agricul. Co. 2, Barbers Hill, sw side, dr 1200 ft; Richardson 3, Barbers Hill, sw side, sand and shale, oil odor, 2080 ft.

COLORADO COUNTY—Rich Oil Corp.'s Brun 1, 3 mi ne Columbus, sd 1215 ft. The Texas Co.'s Kveton 1, Cat Springs, dr 1108 ft, sandy shale. Shell Pet. Corp.'s Neuendorff 1, 1 mi ne Bernado, moving in. Humble's Herder 1, Altair, dr 45 ft, sand. Merrett et al's Zverck 1, 2 mi e Ellinger, sd 320 ft.

FAYETTE COUNTY—Phalen et al's Cervanca 1, 6 mi s La Grange, repairing rig, td 3200 ft. Moore et al's Kerr 1, Muldoon, sd 2078 ft. National Oil Co.'s Melcher 1, Plum, dr 1462 ft, sand.

FORT BEND COUNTY—Sun Oil Co.'s E. C. Farmer 4, Boling, dr 3865 ft, sand and shale, oil show; Rodgers 2, Boling, dr 3265 ft, sand rock. The Texas Co.'s Dippel B-1, Boling, dr 2067 ft, gbo; Dippel A-1, Boling, dr 3453 ft, hard sand; Pleasants 1, Boling, stdg; E. C. Farmer 2, Boling, ru; Wheat 4, Big Creek, r 3643 ft. Gulf's Moore 18, Moore's Field, dr 2153 ft, gbo. Boling Dome Oil Corp.'s Armstrong 1, Boling, cor lime and sand at 3840 ft. Humble's Brazos Farm 2, Sugarland, ru; Brazos Farm 3, Sugarland, dr 252 ft, clay; Brazos Farm 4, Sugarland, drk; Sugarland Industries 5, Sugarland, set 13⅜ cas at 1019 ft; Deathridge 2, Sugarland, waiting on cement, 3658 ft; Nelson 1, Sugarland, dr 3442 ft; Camp 2, Sugarland, dr 2480 ft, sand and lime; Bankers Mtge. 1, Sugarland, ru. Gulf Prod. Co.'s Deathridge 1, Sugarland, lcn; Sugarland Industries 1, Sugarland, lcn. South Tex. Exploration Co.'s Hartfield 1, Needville, cor hard sand 5130 ft.

GALVESTON COUNTY—Long et al's Irvin & Bishop 1, 2 mi s Dickinson, sd 4322 ft. Republic Prod. Co.'s Lobit 1, 1 mi nw Dickinson, dr 3880 ft, sand and shale.

GOLIAD COUNTY—Booth & McCarson's Murray 1, B 11, Rge 3, Goliad, lcn. Alexander et al's Frame 1, 8 mi n Goliad, dr 500 ft, shale.

HARDIN COUNTY—Guedry Drlg. Co.'s 1, 3 mi s Batson, drk.

HARRIS COUNTY—Torsen et al's Stewart 1, 4 mi sw Genoa, sd 691 ft. Hunt et al's Lobit 1, 4 mi n Goose Creek, sd 2145 ft. Humble's Simms-Smith 75, Goose Creek, bldg drk; Warren 5, Hockley, dr 1926 ft, gbo. Minnetex 1, Mykawa, r 5427 ft. Paxton et al's Brubaker 1, 1 mi ne Clodine, sd 1125 ft. South Tex. Pet. Co.'s Hicks-Higbee 1, near Almeda, dr 2960 ft, hard sand; Morris 3, sw part of Humble field, 2858 ft, sand and rock. The Texas Co.'s House 22, Humble, set 6⅝ at 4115 ft. Brains et al's Lentze 1, 4 mi s Tom Ball, sd 1120 ft.

JACKSON COUNTY—The Texas Co.'s Moore 1, Edna, dr 3188 ft, shale. Wright Bros.' Drushell 8, Edna, drk; Classen 2, Edna, dr 3895 ft, shale.

JEFFERSON COUNTY—Deep Test Oil Corp.'s Faith McFaddin 1, 1¼ mi e of Spindle Top production, sd 3432 ft. J. W. Farhar et al's Rohwedder 1, 5 mi ne Beaumont, dr 2075 ft, gbo. Beaumont Oil Co.'s Tyrrell 1, 2 mi w Brooks, drk. Westbury Synd.'s West 1, 1 mi ne Westbury, dr 2640 ft, sand. River Oil Co.'s Ship Channel Ld. Co. 1, 2 mi se Beaumont, dr 762 ft, gbo. Bleakie Oil Co.'s Tollivar 1, 2½ mi nw Voth, dr 1560 ft, sand. The Texas Co.'s Pipkin & Davis No. 1, Big Hill, cored sand and shale, showed salt water, at 4405 ft. Yount-Lee Oil Co.'s Nona Mills 1, 5 mi s Beaumont, ru.

LAVACA COUNTY—The Texas Co.'s Russeck 1, 6 mi s Ezell, dr 2615 ft, sandy shale and lime.

LIBERTY COUNTY—Barlow et al's Hinchcliff 1, 2½ miles ne Cleveland, 2215 ft. Kouri et al's Campbell 1, 6 mi s Cleveland, sd 2000 ft. Big Dome Interests' Finley 2, 3 mi nw Hardin, drk. The Texas Co.'s Davis 2, Davis Hill, ru. Humble's Sterling 3, Moss Bluff, dr 3197 ft, anhydrite. Sun Oil Co.'s Kovleika 1, N. Dayton, pulled screen to deepen from 4461 ft, after swabbing salt water with slight oil show. Union Explo. Co.'s Esperson 2, 2 mi s Sheeks, dr 650 ft, gbo. Tan Bay Oil Co.'s Christian 1, 10 mi n Hardin, sd 1115 ft.

MATAGORDA COUNTY—Crossland et al's Hawkins 1, Shepherds Mott, dr 3210 ft, shale and lime. Rycade Oil Corp.'s Hudson-Humble 4, Markham, abn at 3581 ft. Dr. P. S. Griffith's Culver 1, e Citrus Grove, sd 3215 ft; Baer 1, 1½ mi n Gulf Hill, dr 1705 ft, shale.

ORANGE COUNTY—Veteran Oil Co.'s Reed 1, 2 mi se Orange field, sd 2072 ft. The Texas Co.'s Kuhn 1 4 mi e Spindle Top, dr 66 ft, clay.

REFUGIO COUNTY—Blanco Oil Co.'s St. John 1, 3 mi nw Refugio, td 2250 ft. Davidson Horn's Howard 1, 3 mi sw Refugio, sd 1960 ft. Magnolia's Glenwinckle 1, 1 mi n Refugio field, dr 2978 ft, gbo, had sand showing oil at 2815 ft. and 2870 ft.

VICTORIA COUNTY—Humble's Kahutek 1, 1½ mi ne Nursery sd 603 ft.

WALLER COUNTY—Dixie O. & G. Co.'s Brazso River State 1, San Felipe, sd 500 ft. The Texas Co.'s Young 1, 3 mi e Raccoon Bend, ru.

WASHINGTON COUNTY—Sun Oil Co.'s J. Grote 1, Clay Creek, pulled screen to deepen; J. Grote 2, Clay Creek, lcn; L. Marcus 1, Clay Creek, dr 3591 ft, hard sand; C. H. Marcus 1, Clay Creek, dr 1078 ft, shale; Einman 1, Clay Creek, setting liner to test at 1850 ft; C. Einman 2, Clay Creek, lcn; G. F. Grote 4, Clay Creek, lcn. G. F. Grote, 4, Clay Creek, lcn. Davis et al's Seward 1, ½ mi n Independence, dr 1305 ft, gbo.

SOUTHWEST TEXAS

Completions

MAVERICK COUNTY—		
Rycade Oil Corp., Sullivan 3, 20 mi e Eagle Pass	*	5460
Chittim 2, 20 mi e Eagle Pass	*	7635
CALDWELL COUNTY—		
Bartlett Bros., Martindale 2, 5 mi sw Lockhart	*	1622
Shell, School Land 1, Jolly dist	*	dk
STARR COUNTY—		
The Texas Co., Resendez 1, near Roma	*	3725

BASTROP COUNTY—Cranfill & Reynolds' Day 1, Cedar Creek townsite, dr Austin chalk 1925 ft, top chalk 1685 ft. Gypsy Prod. Co.'s Lottmann 1, e Bastrop, td 2145 ft. Livingston et al's McCall 1, wo, 1 mi s Bastrop, sd 1010 ft. Owens et al's White 1, 2 mi w Cedar Creek, sd 1620 ft; Goodman 1, 1½ mi from Cedar Creek, sd 382 ft.

CALDWELL COUNTY—Shell's Wilhms 1, Jolly district, temp abn, lcn. Anderson et al's J. P. Horner 1, dr 650 ft shale. S. & M. Corp.'s Lynch 1, 5 mi e Lockhart, dr 2325 ft Edwards lime, no show. Gulf's Graffe 1, Branyon dist, sp.

DUVAL COUNTY — O. Henry Oil Co.'s Henry 1, dr 1640 ft. W. F. Morgan's Welder Wood 1, sur 102, dr 90 ft.

GONZALES COUNTY—Greene et al's Dix 1, sw part of county, sd 665 ft. Flynn et al's Wilhouser 1, sw part of county, dr 5212 ft lime. Cranfill & Reynolds' Webb 1, Ottine area, dr 3792 ft Taylor marl. Empire G. & F. Co.'s San Marcos River State 1, Ottine area, set 15¾-in cas at 84ft. Indiana Pet. Corp.'s Karnstadt 1, Ottine area, set 10-in cas at 385 ft. Joe Bruner's Miller 1, 1 mi n Waelder, ru and sd.

GUADALUPE COUNTY—Christie et al's Thomas 1, near Prairie Lea, sd 1053 ft. Sights et al's Woehler 1, 4 mi e Seguin, dr 1670 ft shale. Miller Bros.' Springs 1, 5 mi se Seguin, dr 1992 ft. Shell Pet. Corp.'s Grein 1, 4 mi se Seguin, dr 1180 ft gbo. Simms Oil Co.'s Jandt 1, 2 mi w Seguin, dr 1258 ft chalk.

JIM HOGG COUNTY—The Texas Co.'s Vela 1, sec 582, blk 52, lcn.

MAVERICK COUNTY—Rycade Oil Corp.'s Chittim 4, 20 mi e Eagle Pass, digging cellar; Chittim 3, 20 mi e Eagle Pass, dr 2620 ft lime. Ryan Consolidated Pet. Corp.'s Indio Co. 2, 24 mi se Eagle Pass, td 1320 ft.

NUECES COUNTY—Aqua Dulce G. & G. Co.'s Wolcott 1, Aqua Dulce, lcn.

STARR COUNTY—The Texas Co.'s Resendez 1, abn sandy shale at 3725 ft.

WEBB COUNTY—The Texas Co.'s Weeks & Wilder 1, sec 683, near Carolina-Tex pool, lcn.

EAST TEXAS

Completions

BOGGY CREEK—		
Humble, C. W. Hurd 1, David Roberts sur	*	3332
A. E. Todd B-1	1500	3601

ANDERSON COUNTY—Humble's Neches River 1, Boggy Creek, ru; Lizzie Smith 3, Boggy Creek, waiting on cement to set, 3662 ft; Earl & Ragsdale 4, Boggy Creek, dr 465 ft, rock; T. J. Jones B-1, Boggy Creek dr 1410 ft, rock.

BOWIE COUNTY—Hooks O. & G. Co.'s Rosenberg 1, King sur, temp abn td 3086 ft.

CAMP COUNTY—Rogers et al's Enfelt 1, Montgomery sur, sd wo 1978 ft.

CASS COUNTY— Davis & Pigg's Ed Lambert sur, sd wo 1952 ft.

RED RIVER COUNTY—D. M. Buffington's Hoosier 1, Hughart sur, dr 1550 ft. Shad Harper's Garland 1, Jos. Wagley sur, sd wo 1862 ft, Johnson Pet. Co.'s Randolph 2, Dean sur, sd wo 1440 ft.

SHELBY COUNTY—Chapparal Oil Co.'s Holt 2, Matthew Moore sur, sd wo 3004 ft. Gulf Refining Co.'s Caraway 1, Patterson sur, dr gray lime 2727 ft.

WEST TEXAS

Completions

PECOS COUNTY—		
Geo. H. Anderson and Tower-McKana, University 1,	¶7	1998
CONCHO COUNTY—		
J. L. Duffey-Clark-McGee, Noyes 1	*	1635
HOWARD COUNTY—		
Greene O. & R. Co., Furrh 1	*	3503
REEVES COUNTY—		
Dr. Kitsos et al, Kloh 1	*	1250
WARD COUNTY—		
Prairie O. & G. Co., Sealy 1	¶3	3505
Talbot-Dittman et al, Dorr 1	*	2623

ANDREWS COUNTY—Deep Rock Oil Co.'s Hostetter 1, elev 3224 ft, top salt 1890 ft, dr 2400 ft.

BORDEN COUNTY—Gibson-Johnson et al's Higginbotham 1, lcn. Greene O. & R. Co.'s Slaughter 1, dr 385 ft. Ed Hyde et al's Beal 1, lcn.

BREWSTER COUNTY—Ed W. Bateman & Co.'s Neville 1, elev 3950 ft, dr 1465 ft. Brewster Oil Co.'s Fee 1, dr 475 ft. J. P. Johnson and Bert Weekly's Jackson-Harmon 1, lcn.

COKE COUNTY—Cates & Dennis' J. R. Mims 1, dr by junk 1585 ft; Mims 2, sp and sd. Louisiana Oil Ref. Corp.'s Powers 1, elev 2040 ft, sd hfw 3777 ft. Mid-Kansas O. & G. Co.'s Lackey 1, cem 8-in cas 3033 ft.

CONCHO COUNTY—Lloyd Jones et al's Jones 1, sd 660 ft. J. L. Duffey-Loofbourrow et al's Hill 1, dr 1385 ft. J. L. Duffey-Clark-McGee's Lovelace-Lockhart 1, sd 660 ft.

CRANE COUNTY—D. C. Duffey et al's Cowden 4, elev 2584 ft, top salt 710 ft, co after shot, td 2428 ft. Gulf Prod. Co.'s Waddell 6, top salt 1270 ft, dr 2180 ft.

CROCKETT COUNTY — Anderson & Williams' University 1, (dd) dr 2605 ft. Barbara Oil Co's Cox 1, sd 1290 ft. W. W. Donnelly-W. A. Moncrief et al's Todd 1, (sec 35), sp and sd; Todd 2, sd 440 ft. Ed. G. Lewis and

—just Hot Oil!

Hot Oil should be just Hot Oil. Never under any circumstances should it be a problem around a refinery.

Of course Hot Oil was once a very real problem, but there is now no combination of condition to which Transit Pumps fail to offer an easy solution.

Hot Oil has been a sort of Transit hobby, like all other pump problems inimical to field, pipe line and refinery activities.

So if Hot Oil presents any difficulties you haven't overcome completely and economically, let us send a man to look over the situation. Let us make recommendations based on very wide experience backed up by the master pump manufacturers of all time.

It will not obligate you in the least. It is our idea of service to indicate what we know can be done, leaving the decision to you without pressure.

- - - **TRANSIT PUMPS** - - -

QUALITY PRODUCTS ONLY

FRICK REID
SUPPLY CORPORATION

Stores Everywhere

PITTSBURGH, PA. TULSA, OKLA.

Axelson Machine Co.
Sucker Rods, Pull Rods, Plunger Working Barrels (Pumps) etc.

Beaumont Iron Works Company
Dreadnaught Rotary Equipment Water-Cooled Drawworks, Pump-in Hoists, Traveling Blocks, etc.

Donovan Boiler Works
Oil Country Boilers and Tanks

Frick-Reid Service Belting
Rubber Covered and Friction Surface

Whitlock Cordage Co.
Manila Cordage, including Frick-Reid Manila Bull Ropes—same quality for ten years.

J. P. Ratigan
Grips, Clamps, Beam Hangers

Joseph Reid Gas Engine Company
Gas and Oil Engines, two and four-cycle, Band Wheel and Direct Drive Pumping Powers.

National Transit Pump and Machine Co.
Power and Steam Pumps.

Jones & Laughlin Steel Corp.
Seamless and Lapweld Tubular Goods.

Walworth Company
Valves, Fittings and Tools for Steam, Water, Gas, Oil and Air.

Rossendale-Reddaway Company
"Camel Hair" Beltings, Belt Clamps.

Engineering Crews
for the installation of Pumping Powers and related equipment.

W. T. Daniels' Pecos River Bed 1, sp and sd. Tidal Oil Co.'s W. W. Weatherred 1, dr 100 ft. J. D. Wheeler et al's State Fe 1, sd 410 ft.

CULBERSON COUNTY — Deep Rock Oil Co.'s Kloh 1, lcn. Hickey et al's Finley 1, dr hfw 1705 ft.

JEFF DAVIS COUNTY—Sam F. Means et al's J. Z. Means 1, dr 3775 ft.

DAWSON COUNTY—Magnolia Pet. Co.'s Jeter 1, elev 2889 ft, top salt 1640 ft, top lime 3560 ft, dr 4310 ft.

EL PASO COUNTY—C. E. Sillix et al's Malone 1, temp abn 1010 ft.

FISHER COUNTY—Bickerstaff et al's McWhirter 1, elev 1932 ft, sd 2000 ft. Cranfill & Reynolds and Sun Oil Co.'s Brown 1, dr 2370 ft; Fleming 1, dr 1575 ft; B. F. Willingham 2, dr 455 ft. Culberson Bros. and Mesa Oil Co.'s A. J. Griffin 1, rig. J. B. Dunigan et al's Henry 1, dr 1685 ft. Gilman-McMurray and French's Cleveland 1, dr 640 ft. Hucony Gas Co.'s Marberry 1, elev 1876 ft, top lime 2960 ft, co 3230 ft. Landreth Prod. Corp.'s Cooper 1, ur cas 1705 ft. Bob Rainey et al's Marberry 2, elev 1929 ft, top lime 2995 ft, sd 3507 ft. Roeser-Pendleton et al's A. T. Haught 1, lcn. I. E. Thompson et al's Newman 1, elev 1882 ft, top lime 2810 ft, dr 3095 ft. The Texas Co. and Phillips Pet. Co.'s Hail 1, dk.

GAINES COUNTY—Pure Oil Co.'s Willliamson 1, elev 3197 ft, top salt 2333 ft, anhydrite 3236 ft.

GARZA COUNTY—Emerald Oil Co.'s J. M. Boren 4, dr 1260 ft.

GLASSCOCK COUNTY—Fred L. Kyle and Chas. Daniels' Meek 1, elev 2792 ft, dk. Gibson-Johnson et al's Mann 1, elev 2703 ft, top salt 1170 ft, dr 2215 ft. McElreath-Suggett et al's Underwood 1, lcn. Merriwether Oil Co.'s McDowell 2, elev 2517 ft, top salt 970 ft, top lime 2445 ft, ur cas 2720 ft. Penn Oil Co. and Empire G. & F. Co.'s Hughes 1, elev 2733 ft, dr 1570 ft. White Eagle O. & R. Co.'s Dunbar 1, elev 2705 ft, top salt 1140 ft, dr 2215 ft. World Oil Co.'s McDowell 1-C, elev 2530 ft, dr 755 ft.

TOM GREEN COUNTY—F. P. Green et al's Fee 1, sd 1930 ft. Williams et al's A. Wilkey 1, lcn.

HOWARD COUNTY — Harrison et al's Dodge 1, sd 3257 ft. Phillips Pet. Co.'s Thomas 1, elev 2591 ft, top salt 1170 ft, top lime 3030 ft, ur 6-in cas 3925 ft.

HUDSPETH COUNTY — The California Co.'s University 1, elev 5833 ft, dr 515 ft. Lockhart Bros. et al's Western State Fee 1, sp and sd. Western States Oil Co.'s Gardner-Mosely 1, elev 5086 ft, sd 3155 ft; Moore 1, elev 5150 ft, sd 2760 ft.

IRION COUNTY — Furhman Pet. Corp.'s Sugg 1, lease 3, dr 130 ft. Kimbrough et al's Nutt 1, elev 2299 ft, sd 1420 ft. Kimbrough & Flinchbaugh's Tankersley 1, elev 2241 ft, sp and sd. Kingwood Oil Co.'s Sugg 1, elev 2334 ft, dr lime 5720 ft. Western Oil Co.'s H. Horney 1, testing oil sand 1225-26 ft. Signal Oil Co.'s Sugg 2, fsh 350 ft. Sun Oil Co.'s F. Tankersley 1, coring 1050 ft. Webb et al's Nutt 1, elev 2351 ft, dr 3120 ft.

JONES COUNTY—Culberson Bros. et al's Anderson 1, lcn. E. P. Campbell & Co.'s Herndon 2, dr 1930 ft. McClanahan et al's Hall 1, dr 1010 ft. McGinley Corp.'s Whittemore 1, sd 225 ft. McNeeley et al's Bland 1, sp and sd. Mid-Sun Oil Corp.'s Hoehn 1, fsh 2385 ft. Milt Richardson-McGinley et al's Martin 1, dr 1300 ft. Roeser-Pendleton et al's Castle 1, dr 1215 ft. Sedgwick O. & G. Co.'s Brown 1, lcn; Routh 1, dr 210 ft. Tomberlin et al's Horn 1, sp and sd.

KING COUNTY—Huff Oil Co.'s M. A. Martin 1, rig.

LOVING COUNTY — Lockhart & Co.'s Hazell 1, rig; H. L. Lepp 1, sp; Hubbard 1, crooked hole 475 ft; Hubbard 2, dk; Wheat-Lloyd 1-A, elev 2697 ft, top salt 715 ft, dr 3280 ft.

LYNN COUNTY—Hart Oil Corp. and McCamey's Edwards 1, elev 3128 feet, ur cas 740 ft. H. F. Miller et al's May 1, sp and sd.

MENARD COUNTY—Carl G. Cromwell et al's Wilhelm 1, elev 2245 ft, set cas 1920 ft.

MIDLAND COUNTY—O. H. Shoup et al's Parks 1, sd 4980 ft.

MITCHELL COUNTY—E. P. Campbell & Co.'s Pond 1, elev 2119 ft, top lime 1385 ft, sd 3003 ft. Clopton & Hammon's McKenzie 1, lcn. Simms Oil Co.'s Ellwood 1, rig burned, gas blowout 660 ft. Teas & Wheeler's Radford 1, elev 2223 ft, top salt 667 ft, top lime 1365 ft, crooked hole 3655 ft.

NOLAN COUNTY—Bradstreet et al's Kuteman 1, rig. C. M. Root Drlg. Co.'s Simpson 1, ur cas 2510 ft. White Eagle O. & R. Co.'s Allyn 1, elev 2158 ft, dr 2845 ft.

PECOS COUNTY—Alexander Lyles et al's Sellman 1, sd 1655 ft. Atlantic Oil Prod. Co.'s Sellman 1, elev 2751 ft, top salt 838 ft, top lime 1728 ft, sd 1793 ft. Benedum-Trees et al's Corder 1-A, elev 2713 ft, top lime 1840 ft, sd 3275 ft. M. H. Black et al's Pecos Land Co. Fee 1, lcn. Buell-Hagan et al's University 1-B, lcn. K. A. Crowley et al's R. G. Heiner 1, lcn. M. Z. Dibble et al's Bonebrake 1, elev 2544 ft, top salt 1874 ft, sd 2004 ft. Doran & McGee et al's Pecos Land Co. 1, lcn. J. W. Grant et al's Turney 1, elev 2592 ft, top lime 1015 ft, dr 4105 ft. Grayburg Oil Co.'s University 1, machine. Marland Prod. Co.'s Blakeslee 1, fsh 540 ft. McCarty Oil Co.'s Gray 1, dr 855 ft. Mauch & Krogen's Holmes 1, elev 2325 ft, top salt 535 ft, sd 1010 ft. Pecos Valley Oil Co.'s Pecos Land Co. 2, top salt 1107 ft, dr 1400 ft. Perren et al's H. J. Eaton 1, lcn. Phillips Pet. Co.'s J. L. Nutt 2, elev 2113 ft, top salt 1720 ft, dr 2535 ft. Schumaker et al's Williams 1, elev 2388 ft, set cas 552 ft. Southern Crude Oil Pur. Co.'s Scarbauer 1, elev 3680 ft, dr 3480 ft. Stein & McGee's Peterson 1, lcn. Talbot-Dittman et al's Unsicker 1, sd with good show oil and gas, td 1365 ft. Transcontinental Oil Co.'s University 1, elev 2552 ft, top lime 1035 and 3315 ft, dr 4177 ft. Trees Oil Co. and Empire's J. C. Trees 1, sp. World Oil Co.'s Kloh 1, elev 2810 ft, sd 3105 ft.

PRESIDIO COUNTY—Brite Prod. Co.'s L. C. Brite 1, dr 5060 ft. Eastland Oil Co. et al's Tootle 1, sp and sd. C. E. Miller-Delmar-Phillips Pet. Co.'s Tootle 1, ur 2250 ft.

REAGAN COUNTY—The California Co.'s University 5, elev 2879 ft, top salt 1280 ft, dr 2570 ft. R. V. Oberholtzer et al's Talley 1, lcn.

REEVES COUNTY—E. W. Brooks et al's Eddins 1, elev 2719 ft, top salt 1622 ft, top lime 3216 ft, sd 5658 ft. Exploration Co.'s Kinney 1, elev 2847 ft, sd 2900 ft. Penn Oil Co.'s Bowles 1, top salt 1725 ft, dr 2005 ft. Southern Crude and Dixie Oil Co.'s Kloh 1, rig. Lee O. White et al's Kloh 1, rig.

RUNNELS COUNTY—G. W. Boyce et al's Lange 1, sd 1350 ft. Marland Prod. Co.'s August Herring 1, dr 205 ft. Gene Mays et al's Currie 1, sp and sd. Ira Nourse and Tilton's Cramer 1, dr 2490 ft. Union Oil Co.'s Allen 1, dr 2680 ft.

SCHLEICHER COUNTY—Ft. McKavitt Oil Co.'s Tisdale 1, elev 2155 ft, sd 1535 ft. Interstate Exploration Co.'s Whitten 1, co 440 ft.

SCURRY COUNTY—R. B. Pender-Dieckman et al's Davis 1, elev 2208 ft, top salt 445 ft, sd 1810 ft.

STERLING COUNTY — Foster-Gracey Oil

Gott
Water Cans & Coolers
Built to last... you will always be assured of a fresh supply of pure water, when you have a GOTT Water Cooler. Order one now from your supply store.
GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.
GOTT Water Coolers 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.
Gotkool
H. P. GOTT MFG. CO. · Winfield, Kansas
KEEP PURE DRINKING WATER ALWAYS HANDY

CARBON (BLACK DIAMONDS)
FOR DIAMOND CORE DRILLS
— IMPORTERS —
INDUSTRIAL DIAMONDS
— MANUFACTURERS —
DIAMOND POINTED TOOLS FOR ALL MECHANICAL PURPOSES
WRITE OR WIRE FOR CATALOGUE AND FULL PARTICULARS
THE DIAMOND DRILL CARBON CO.
PARK ROW, NEW YORK, N.Y. CABLE ADDRESS, CREDOTAN, N.Y.

HOW CAN YOU TELL DEPENDABLE PIPE?

PRODUCTS
Tubing
Casing
Line and
Rotary Drill
Pipe

You cannot judge pipe by looking at it. All steel pipe looks about the same. And you cannot afford to inspect and analyze every piece of pipe you buy or install.

But you can make sure that it's Republic Steel Pipe. Then you have the assurance of strength, uniformity and durability. Then you know that every length has been made to conform to rigid specifications . . . has passed severe tests and inspections before it is ever placed on the market. Then you can not only expect, but you can be certain of satisfactory pipe service.

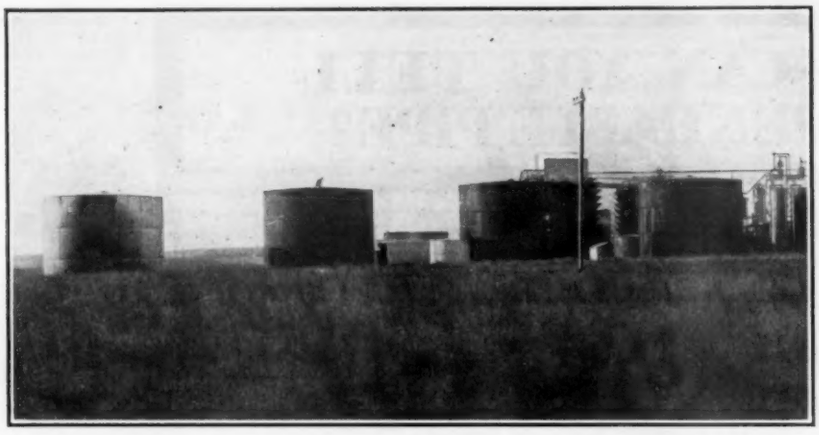
The name Republic on steel pipe is a positive answer to the question of dependability . . . insurance of quality piping in your oil or gas lines.

Branch Offices

Birmingham
Boston
Buffalo
Chicago
Cincinnati
Cleveland
Dallas
Denver
Detroit
El Paso
Los Angeles
New York
Philadelphia
Pittsburgh
San Francisco
Seattle
St. Louis

REPUBLIC
IRON & STEEL CO. YOUNGSTOWN O.
PIPE & CASING

Say you saw it in The OIL WEEKLY



MALONEY'S *Protect the PRICE*
of Stored Oil

Photo shows four 3000-Barrel Maloneys, MacMillan Refining Co., Borger, Texas, erected December, 1926

MADE OF KEYSTONE COPPER STEEL

THE MALONEY TANK MFG. CO.
Tulsa, Okla., U. S. A.
Distributors at All Principal Petroleum Points

MADE OF KEYSTONE COPPER STEEL

Sizes: 12 to 10,000 Barrels Packed in Steel-Bound Crates for Export.

MALONEY

Have a Copy Sent to Your Home

Why depend on reading the "Office Copy" when you can get a copy of The OIL WEEKLY for your own files,—sent to your home each week for

ONLY $1.00 A YEAR

Use the Coupon NOW

The OIL WEEKLY,
Box 1307, Houston, Texas.
Gentlemen: Please find enclosed one dollar (check or currency will do) for which send me your publication for one year.

Name .....
Street and No. .....
City..... State .....
I am with the.....Company
and my position is .....
(BE SURE TO STATE COMPANY AND POSITION, otherwise it will be necessary for us to hold up entering your subscription until we can get this information for you.)

Co.'s Foster 1, elev 2260 ft, dr 1975 ft. Miller Bros. et al's Foster 1, dk.

SUTTON COUNTY — Phillips Pet. Co.'s Holman 1, elev 2247 ft, top lime 2315 ft, fsh 5770 ft. L. G. Priest et al's Allison 1, sp. Southern Crude and Dixie Oil Co.'s Allison 1, dr hfw 1350 ft.

TAYLOR COUNTY—Burnham et al's Amyx 1, dr 2235 ft. Grisham-Hunter Corp.'s Campbell 1, dr 1215 ft. Mid-Continent Pet. Corp.'s Taylor 1, elev 1933 ft, testing with 700 ft high gravity oil in hole 2445-50 ft, td 2461 ft. Thompson et al's Hammer 1, dr 1615 ft. L. H. Wentz et al's Arnour 1, set cas 515 ft.

TERRELL COUNTY—Milham Corp.'s Bassett 1, elev 2270 ft, sd 4580 ft. Keck-Pecos Oil Trust's Hamilton 1, elev 1733 ft, sd 1749 ft.

TERRY COUNTY—Superior Oil Prod. Co.'s Brownfield 1, elev 3205 ft, top lime 4565 ft, fsh 5080 ft.

VAL VERDE COUNTY—Dyer Bros. et al's Wilson 1, elev 2115 ft, sd 2605 ft. Producers Oil Co. et al's Everett 1, sd 1950 ft. Val Vert Oil Corp.'s Bassett 1-A, dr 3300 ft.

WARD COUNTY—Atlantic Oil Prod. Co. and Delmar Oil Co.'s Hayzlett 1, elev 2504 ft, top salt 715 ft, dr 1990 ft. Barstow O. & G. Co.'s Monroe 1, sp and sd. Gulf Prod. Co.'s G. W. O'Brien 4, rig. J-H-L Oil Co.'s Hayzlett 1, top salt 792 ft, dr 1390 ft. Lovelave et al's Redman 1, sp and sd. Rector Oil Co.'s Johnson 1, elev 2438 ft, top salt 745 ft, top lime 2010 ft, ur 2550 ft.

WINKLER COUNTY — Gulf Prod. Co.'s Scarborough 1, elev 2953 ft, top salt 1210 ft, cem 8-in cas 1742 ft. Prairie O. & G. Co.'s Scarborough 1, rig. Shell Pet. Corp. and Llano Oil Co.'s Scarborough 4, top salt 1105 ft, dr 1748 ft; Scarborough 5, rig. Texas-Canadian Oil Co.'s Kloh 1, sp.

YOAKUM COUNTY—Bert Weekly et al's Knight 1, sp and sd.

SOUTH LOUISIANA

ACADIA PARISH—E. F. Simms' Clement 1, Jennings, sd; Clement 2, Jennings, fsh for 3-inch at 3840 ft; Grace von Schuler 1, Jennings, dr 5180 ft hard sand; Jennings Oil Co. 1, Jennings, sd 3545 ft; Cockrell 1, Jennings, sd 4330 ft; Cockrell 2, Jennings, set 12½-inch cas at 1380 ft.

ASCENSION PARISH—Gulf's United Lands Co. 11, Sorrento Dome, ru; Belle Helene Sugar Co. 1, Darrow, lcn. Triumph Oil Corp.'s J. D. Lacey et al 2, 3 mi se Sorrento, td 1350 ft. Burnside Oil Co.'s Roberts 1, td 920 ft. Big Dome Drlg. & Dev. Co. & J. S. Kimbrough's Rearwood 1, Sec. 82, sd 1000 ft. Baton Rouge Pet. Co.'s Liotta 1, sd 1000 ft.

CALCASIEU PARISH — Union Sulphur Co.'s Fee 735, Sulphur, dr 5980 ft water sand; Fee 736, Sulphur, cored water sand at 4025 ft; Fee 739, Sulphur, dr 1135 ft rock; Fee 740, Sulphur, cored sand at 4850 ft; Fee 741, Sulphur, dr 1970 ft lime and shale. J. W. Watson et al's La. Land Co. 1, Sulphur, temp sd after testing salt water at 5042 ft.

CAMERON PARISH—Pure Oil Co.'s Yount-Lee 8, Sweet Lake, dr 4470 ft; Yount-Lee 7, Sweet Lake, prep. to run 4-inch tubing to make well flow, came in Feb. 4 at 4594 ft making 40 bbls oil per hr. Calcasieu Oil Co.'s Doiron 5, E. Hackberry, set 10-inch at 960 ft; Watkins 13, E. Hackberry dr 210 ft rock. The Texas Co.'s Calcasieu Lake B-4, E. Hackberry, driving piling; Calcasieu Lake A-3, S. Calcasieu Lake, driving piling. Rycade Oil Corp.'s Gulf Land 1, Hackberry, prep, to drill in to test oil sand at 4341 ft. Yount-Lee Oil Co.'s Perkins 1, Hackberry, dr 4140 ft sandy shale; R. Vincent 1, Hackberry, dr 3425 ft sandy shale. Cameron Oil Co.'s Duhon 3, Hackberry, lcn. Cameron Oil Co.-Rycade's Gulf Land 1, Hackberry, moving in rig. Noble Oil Co.'s Ellender 3, Hackberry, dr 4390 ft sandy shale. Cherokee Oil Co.'s Duhon 1, Hackberry, sd 1300 ft. Seiss, Green & Sutton's Sonnier 1, prep, to test oil sand at 3130 ft. Chas. T. Madison's Duhon 1, Hackberry, sd 22 ft. Shell's Watkins 6, Black Bayou, dr 2930 ft hard sand; Watkins 7, Black Bayou, dr 792 ft sand and gravel.

IBERIA PARISH—The Texas Co.-La. Land & Explo. Co.'s Vermilion Bay A-3, Vermilion Bay, dr 4115 ft hard sand. Gulf's Fannie Kling et al 3, Loreauville, td 2945 ft; Moresi Co. et al 1, Loreauville, ru. Jefferson Lake Oil Co.'s Lake Peigneur 1, Jefferson Island, dr 754 ft hard sandy lime rock.

IBERVILLE PARISH—Shell's Wilbert 3,

The Sign of a Good Gasoline

MAGNOLIA ANTI-KNOCK GASOLINE

Backed by Magnolia Standards

BEFORE Magnolia Anti-Knock Gasoline was put on the market, careful research, exhaustive tests and proved results were necessary to insure that our new gasoline was up to the high standards maintained in all of Magnolia products.

Magnolia Anti-Knock Gasoline is offered to the public and to the trade with the reputation of the Magnolia Petroleum Company solidly behind it.

It is a pure petroleum motor fuel which gives quiet and steady tugging power without over-heating on the long, heavy pulls, a fuel for high and medium compression motors which eliminates fuel knocks without penalties for the repair of pistons, valves or gas lines.

The same usual high quality will be maintained on Magnolia Gasoline. Magnolene Motor Oils and Lubricants defeat wear on all moving parts of automotive equipment.

All Magnolia Products Are Obtainable at Magnolia Stations and Dealers

Magnolia Fuel Oil Loading Stations at Beaumont, Corsicana, Sabine, Galveston, Ft. Worth, Harbor Island, Luling, Corpus Christi, Dallas, Herma, Arkansas; Mirando.

Refineries located at Beaumont, Corsicana, Ft. Worth.

Division Sales Offices at Dallas, Houston, Ft. Worth, San Antonio, Oklahoma City, Little Rock, Amarillo, El Paso.

INQUIRIES RESPECTFULLY SOLICITED

MAGNOLIA PETROLEUM COMPANY

General Offices: DALLAS, TEXAS

HEYDRICK'S NEW MAPS
WEST TEXAS
County Maps
Combination Maps
Descriptions and prices on application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

Southern Blue Print & Supply Co.
Complete Blue Printing Service
Photostating; Map Mounting
Lithoprint Reproduction; Supplies
510½ Travis St. Houston, Texas

PATENTS
Patents Obtained and Trade Marks and Copyrights Registered
HARDWAY & CATHEY
428-29-30 Bankers Mortgage Bldg.
Phone Fairfax 8232 Houston, Texas

JOHN F. WEINZIERL
CONSULTING GEOLOGIST
ADVISOR ON GEOPHYSICAL INSTRUMENTS
619 Petroleum Bldg., Houston, Texas

HIRSCH, BROWN AND SUSMAN
Attorneys at Law
Bankers Mortgage Building,
Houston, Texas
Specializing in Oil Law and Land Law

PATENTS
Patents Obtained, Trade Marks, Patent Causes
JESSE R. STONE
Formerly Assistant Examiner United States Patent Office
Andrews, Streetman, Logue & Mobley
12th Floor Union N. Bk., Houston, Texs

McCollum Exploration Company
Contracts taken for Seismograph Work
UNITED STATES
5522 Connecticut Ave.,
WASHINGTON, D. C.
FOREIGN COUNTRIES
1211 Esperson Bldg.,
HOUSTON, TEXAS

White Castle dome, dr 3080 ft shale and lime. Standard of La.'s Wilbert 2, Bayou Blue dome, Sec. 74, driving piling; Wilbert 3, Bayou Blue dome, lcn; Schwing 1, Bayou Blue dome, td 1775 ft gbo; Schwing 2, Bayou Blue dome, Sec. 74-9s-10e, lcn. Union Sulphur Co.'s Schwing 3, Bayou des Glaise dome, sd 3675 ft because of high water.

JEFFERSON DAVIS PARISH — Vacuum Oil Co.'s Earl 1, Roanoke, ru; DeVilbiss 1, Roanoke district, dr 4624 ft water sand.

LA FOURCHE PARISH—Gulf's Stark 9, Thibodaux, ru. Union Sulphur Co.'s Dibert-Stark-Brown 1, Thibodaux, lcn.

PLAQUEMINES PARISH—Gulf's Morris & Rose 1, Spanish Pass, 5 mi sw Venice, ru. The Texas Co.'s Garden Island Bay 1, 15 mi se Venice, lcn.

POINTE COUPEE PARISH—Miller et al's Kornbacker 1, sd 1925 ft. Fruen et al's La Cour 1, ru and standing.

ST. JAMES PARISH—U. S. Mineral Dev. Co.'s Reynaul Co. 1, sd 1720 ft.

ST. LANDRY PARISH—The Texas Co.'s Botany Bay Fee 1, Port Barre dome, may test oil show in sandy shale at 3765 ft.

ST. MARTIN PARISH—Rycade's State 3, Bayou Bouillon, ru; Bayou Bouillon Fee 6, dr 2888 ft water sand; Bayou Bouillon Fee 7, lcn; Bayou Bouillon Fee 8, ru; Atchafalaya Fee 3, Bayou Bouillon, dr 4685 ft sand and shale; Atchafalaya Fee 5, Bayou Bouillon, dk. Ohio Oil Co.'s Martin et al 3, Hager dome, dr 4226 ft hard sand; Burke 3, Hager dome, lcn. Yount-Lee Oil Co.'s La. Pet. Co. 4, Anse la Butte, dr 1200 ft water sand.

ST. MARY PARISH—J. Dannenbaum et al's Le Blue 1, Charenton, sd 3015 ft.

ST. TAMMANY PARISH—Pearl Oil Corp.'s Fritsche 1, Slidell, td 2020 ft.

TANGIPAHOA PARISH—Tanli Oil Co.'s Weinberger 2, sd 4050 ft. Joan Dev. Co.'s Lake Superior Piling Co. 1, td 220 ft.

TERREBONNE PARISH — Southern Gas Co.'s Peoples Sugar Co. 1, Houma, sd 2287 ft. The Texas Co.'s Lake Barre 1, Sec. 37-21s-19e, lcn; Lake Pelto B-1, Sec. 8-23s-18e, lcn; Four Isle Bayou B-1, Sec. 23-21s-16e, lcn; Timbalier Bay A-1, Sec. 19-23s-20e, lcn; Bay Coon Road B-1, Sec. 17-22s-18e, lcn; Dog Lake Bayou A-1, Sec. 6-22s-16e, lcn.

Another Cody Refinery

Cody, Wyo. — There is a continued rumor in this town to the effect that another refinery will be built here early in the spring. Although there is no substantiation of the report, it is said that the Continental Oil Company plans this plant. The 3000-barrel refinery of The Texas Company will be completed and ready for operation on March 1. Work in the field has been delayed somewhat in the last few weeks by the continued bad weather and intense cold.

GERMANY BITUMEN
A well known firm of the bitumen-line wishes to represent a first class, trust free oil company for the sale of Mexico or Venezuela bitumen.
Best references are given and required. Offer to be sent under E. S. 7504 to the ALA, HAASENSTEIN & VOGLER OF HAMBURG, GERMANY.

GOKEY BOTTE SAUVAGE
"The best all-around boot in the world"
Manufactured Since 1850
Water - Proof, Genuine Pac Mocassin, Hand Sewed, Made to Measure. A pound or two lighter than the average boot; easy to put on and take off; no hooks to catch. Ankle strap holds boot in place, and also acts as ankle support.
Write for measure blank and Footwear Catalog.
FREEMAN-THOMPSON SHOE CO.
Dept. 17 St. Paul, Minnesota

Treat CUT OIL with **TRET-O-LITE**
OIL WATER
the **SIMPLEST MOST ECONOMICAL MOST RAPID METHOD**
The Tret-O-lite Process is a fundamentally simple and direct method of correcting the chemical condition present in "cut oil". Treatment with Tret-O-lite causes the petroleum and water to separate *quickly* and *completely*. Cost of treatment is exceedingly low. Let us send our nearest field expert to see you.
Process Patented
WM. S. BARNICKEL & CO.
St. Louis, Mo.
Offices and Plant:
Webster Groves, St. Louis County, Mo.

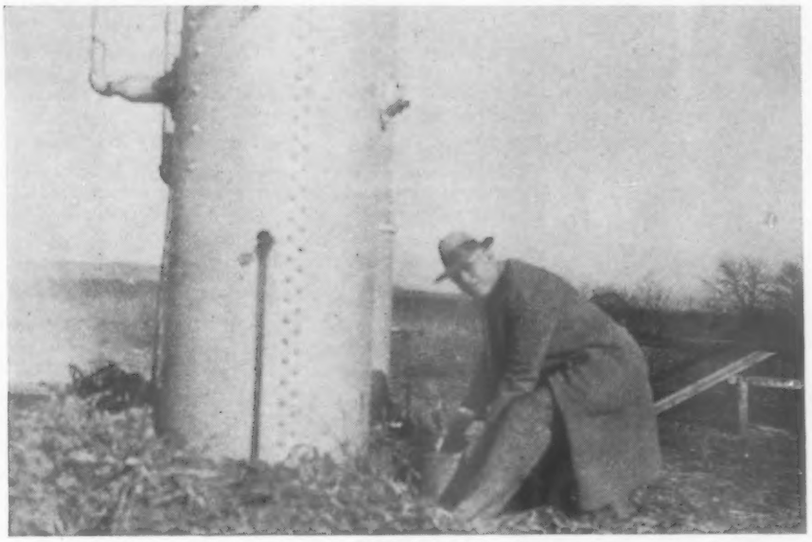
THE FT. WORTH LABORATORIES

Field Gas Testing. Analysis of oil field brines, gas minerals and oil. Bell Thermometers, Hydrometers and Laboratory Glassware
F. B. Porter, B. S., Ch. E., Pres.
R. H. Fash, B. S., Vice-President
828½ Monroe St. Ft. Worth, Tex.

TEXAS SAND & GRAVEL CO., Inc.
Waco, Colorado and Amarillo, Texas
Washed and Screened Gravel and Sand, Pea Gravel, Dredged Pit run Gravel, Road Gravel, and railroad ballast.
Home Office:
1904 Amicable Bldg.,
Waco, Texas
Phone 4467 and 4468
Plants:
Waco Tascosa
Texland Ady
Colorado Saragosa
SERVING ALL THE TEXAS FIELDS

NEW ORLEANS
New St. Charles
One of America's Leading Hotels
ACCOMMODATING 1000 GUESTS
ALFRED S. AMER & CO., LTD.
NEW ORLEANS, LA.
Send for descriptive folder, illustrated Mardi Gras Program for the asking.
Valorization offices for all transportation lines in lobby.

WITH THE MEN IN THE FIELD



J. S. TERRY

J. S. (Jim) Terry, of Terry-Norton Company and J. S. Terry Company, Tulsa, Oklahoma, caught "bleeding" the accumulator tank at a gasoline plant near Broken Arrow. Since Terry Drilling Company is an old and well known drilling contracting concern in the Mid-Continent fields, and occupies offices with Ray M. Collins, popular umpire of the Greater Seminole area, perhaps it should be explained that the evidence is not so damning, since J. S. is really stealing gasoline from one of his own companies. In addition to that, THE OIL WEEKLY representative did not care to walk home from Broken Arrow. Further—Mr. Terry is camera shy.

J. C. JULIAN

J. C. "Jake" Julian, former huskie football star for Bartlesville, Oklahoma, high school, has laughed off practically everything he's come up against but Seminole, where he has served the "secret service" department of Skelly Oil Company since Greater Seminole started making history. Before entering the oil business "Smiling Jake" Julian was known throughout Oklahoma and Southern Kansas as a gridiron star of outstanding ability. During the past three years he has won the reputation of being one of the most popular scouts in his territory.

JOE DAWSON AND ?

Joe Dawson was as much at home in the jungled swamps of Venezuela as he was teaching geology in the University of Texas at Austin not many years ago. Following completion of a course in geology at that institution and the serving of an assistantship as a geological instructor, he joined the Gulf Production Company's geological department in 1921. Until 1924 he served the Gulf in the Balcones Fault district of Texas, and then went to Venezuela with the Venezuelan-Gulf Oil Company for two years. In 1925 he returned to Texas as sub-surface geologist in the San Antonio district. In October, 1928, he was made zone agent for the Gulf in Southwest Texas. Who's your friend, Joe?

W. W. HERRING

W. W. "Dad" Herring, 68-year-old line walker for the pipe line department of the Louisiana Oil Refining Corporation, Shreveport. His job of patroling lines on the watchout for breaks and leaks has carried him more than 24,000 miles on foot in the past six years. It's about as lonely a life as that of the famous fence-riders of Australian ranches, and in some places the only signs of civilization are the company's private telephones used for reporting line leaks.

The excitement, rush and feverish activity of a boom. Forty-five wells to be cemented; each owner clamoring for prompt attention . . . . Fourteen hours later the cementing job was done—cleanly, efficiently, scientifically.

There is only one organization in existence that could have given the industry such service in an emergency. That organization is

HALLIBURTON
OIL WELL CEMENTING COMPANY
DUNCAN, OKLAHOMA

Say you saw it in The OIL WEEKLY

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

Light Weight Machine

STAR DRILLING MACHINE COMPANY

The new No. 40 Speed-Star has just been announced by the Star Drilling Machine Company of Akron, Ohio.

It was built to meet the demands of a light-weight, low priced drilling outfit to handle water wells, structure testing and cleaning out work. It is capable of cleaning out inside tubing to 1000 feet with a light bailer and string of tools. In this connection it is well adapted for knocking out salt from the bottom of gas wells.

The No. 40 Speed-Star can be clamped on the frame of the present Ford or Chevrolet truck. Being easily put on or taken off makes it possible for the truck to be used for other purposes when the drilling outfit is not being used. Moving is greatly simplified with this Speed-Star, as its weight, less truck, is approximately 3400 pounds. Gross weight is about three tons. Thus this light-weight machine can easily be moved to places where heavier tractor type outfits could scarcely go.

Rigging up is quickly and easily done. One man can rig up this machine in a short time after it is spotted on the well location. The mast is raised by engine power and the tools can be carried assembled on the side of the machine when moving.

In drilling the high gear of the truck is used and the slow speeds are available for fishing and pulling pipes. With a light-weight, shock absorbing spudder, wire line can be used exclusively for drilling. Pulleys with combination grooves permit the use of either wire or Manila cable.

More information may be had by addressing the company at Akron, Ohio.

No. 40 Star Drilling Machine

W. & B. Pumping Machine

W. & B. Pumping Machine

SPENCE MACHINE AND SUPPLY COMPANY

The new W. & B. pumping machine of the Spence Machine & Supply Company, Parkersburg, West Virginia, is designed for pumping, pulling rods or tubing, and for operating a swab or bailer. It is equipped with a mast, beam and winch, the latter spooling 2500 feet of three-quarter wire rope. The engine is a 10-horsepower Spence machine with a gear ratio of 14 to 1, thereby supplying ample power for any work necessary in producing a shallow well.

The 36-foot mast is made of heavy channel iron, strongly braced, and built to handle 2500 feet of two-inch tubing.

The W. & B. pumping machine was built to take the place of wooden rigs which were rotting down or to use on wells drilled with a drilling machine. It comes equipped complete, ready to attach to the polish rod.

Further information is available from the Spence Machine & Supply headquarters at Parkersburg.

The Trimont Manufacturing Company of Roxbury, Boston, Massachusetts, has purchased the Stillson wrench business of the Moore Drop Forging Company of Springfield, Massachusetts, and will continue the manufacture of both the original pattern and popular type Stillson wrenches.

The Morco Original Pattern Stillson will, under Trimont manufacture, be known as Sando Original Pattern Stillson and the Morco Popular will hereafter be known as Moroco Popular.

All of the Trimont Company's 40 years' experience in the making of fine tools goes into the forging, hardening and other manufacturing processes of these Stillson wrenches and both will compare favorably in quality and price with other Stillsons of their type now on the market.

Drake Goes to Gray Tool Company

ED J. DRAKE

Ed J. Drake of Houston has recently resigned his position as district manager for Continental Supply Company after 17 years of continuous service with this company, during which time he organized the business of the company in Houston and the Gulf Coast territory.

Mr. Drake's resignation followed changes recently made in the Gray Tool Company of Houston, of which he is a stockholder. Elsworth Gray, one of the former principal stockholders of Gray Tool Company, early this year retired from the business, and his interest was bought by William K. Hughes, R. A. Mueller and Ed J. Drake, the other three stockholders. Mr. Gray will devote his time in the future to his stock farm located at Alvin, Texas.

R. A. Mueller replaces the position of Mr. Gray as manager of the shops of the Gray Tool Company, and Mr. Drake will be in charge of sales, spending much of his time in the field.

Ed Drake has spent the major part of his life in the oil field supply business. He began this work with the National Supply Company of Parkersburg, West Virginia, 35 years ago, and served that organization nine years. He then joined the Oil Well Supply Company, and moved to Oklahoma. After nine years service with the Oil Well Supply Company, he accepted the connection with Continental Supply Company. He has been succeeded in his position with Continental Supply Company by F. H. Thrailkill, formerly with that company at Wichita Falls and more recently in Oklahoma.

Concerning his recent change Mr. Drake said: "We trust that our old friends will not forget us, and that we may have the pleasure of seeing them frequently at the Gray Tool Company. We want to thank these friends for the support they have given us during the past years while we were connected with the Continental Supply Company, and we solicit this same support for our successor, Mr. Thrailkill, who has been connected with the Continental Supply Company for a number of years in the Tulsa territory.

A watch fob and chain set given Mr. Drake last week by employes of the Continental Supply Company in the South Texas district carries the Knights Templar emblem and bears this inscription: "To Ed J. Drake With Highest Regards, By Employes of Continental Supply Company."

William J. Corbett has resigned as secretary-manager of the Steel Founders' Society of America, the trade association of the prominent companies in the United States and Canada manufacturing steel castings, to become assistant to the president of the Fort Pitt Steel Casting Company of McKeesport, Pennsylvania. This company specializes in the manufacture of high grade carbon and alloy steel castings made by the Electric Furnace process. Mr. Corbett has been active on numerous committees of the American Foundrymen's Association and the American Society for Testing Materials, and also on the committee for the investigation of the effect of sulphur and phosphorous in steel, the committee on pattern equipment standardization, and the committee on molding sand, which are joint committees consisting of representatives from the various national associations interested in these subjects.

O. C. S. California Plant

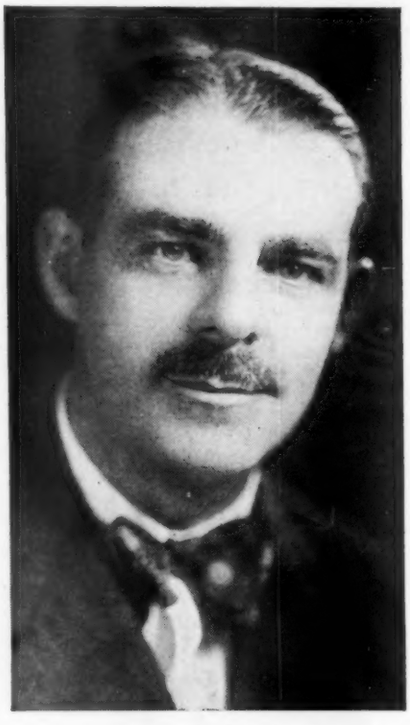
The O. C. S. Manufacturing Company of Coffeyville, Kansas, has announced its plan to start a plant in California. Ten acres of ground in North Long Beach, near Hynes, have been purchased and contract let for the construction of an assembly plant. The property is located on Artesia Boulevard and adjoins the Union Pacific right-of-way.

The property is well located for truck service either from the seaboard or to the fields in the Los Angeles Basin as well as being available to trackage for incoming or outgoing shipments.

Hillman-Cooney, Inc., 2437 Hunter Street, Los Angeles, has handled the sales of all O. C. S. products in California during the past four years and will continue to handle the output of the California plant.

The O. C. S. Manufacturing Company manufactures transmission equipment for standardizing derricks. Its machinery for cable tool drilling and deep well pumping is highly specialized, particularly for heavy duty work. The deeper drilling in California and in the Mid-Continent is stimulating demand for its products, causing this expansion.

Curran With Harrisburg



JAMES J. CURRAN

James J. Curran, for many years metallurgist with the Souther Engineering Company, Hartford, Connecticut, is now metallurgical engineer with the Harrisburg Pipe and Pipe Bending Company, Harrisburg, Pennsylvania.

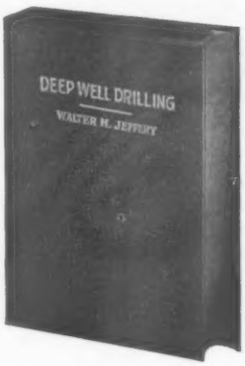
Mr. Curran, a native of New Britain, Connecticut, was educated at Worcester Polytechnic Institute and Cornell University. During the war he was employed as chemist and metallurgical inspector of war materials. Since the war he has been engaged in general metallurgical investigation and consultation with the Henry Souther Company.

In his new connection Mr. Curran will be in charge of chemical and metallurgical control and development of the varied line of carbon and alloy steels, hydraulic and drop forgings and drawn seamless cylinder specialties manufactured by Harrisburg Pipe and Pipe Bending Company.

Mr. Curran is a member of the American Society for Steel Treating, the American Foundrymen's Association and the Iron and Steel Institute (British).

Second Revised Edition . . . .

Deep Well Drilling



By
WALTER H.
JEFFERY

Completely Revised and Brought Down to Date

One Hundred Thirty-One Pages New Matter Added

A comprehensive handbook covering in detail modern practices of well drilling by the standard or cable tool and the hydraulic rotary system.

During the few years that have elapsed since the publication of the first edition of "Deep Well Drilling" there have been so many improvements in well drilling methods and equipment that it was found necessary to practically rewrite the book for this second edition. This book furnishes complete information on drilling and the use of tools and equipment necessary to complete wells efficiently.

This book is a reference work for the engineer and the student and a handbook for the practical driller. Written by a man who has familiarized himself with his subject through a lifetime association with it. 662 pages, illustrated, flexible binding. Price reduced to $4.00, Postpaid.

Send Check to

The GULF PUBLISHING COMPANY
P. O. BOX 1307, HOUSTON, TEXAS

. . . and these are just a few

"EVERY ORDER HAS BROUGHT A REPEAT ORDER"
"WELL PULLED ONCE A WEEK BEFORE; 8 MONTHS WITHOUT A CHANGE NOW"
"INSTALLED SIX MONTHS AGO STILL IN USE"
"USED 24 BALLS AND SEATS A MONTH; NO REPLACEMENT OF DROP AND SEAT IN HALF A YEAR"

Twice *the Service of your Best Ball and Seat* or MONEY BACK

Savings! Savings so remarkable that they would be unbelievable were they not the actual reports of users whose names we will give on request.

No one seriously interested in economical production can pass lightly over such records. For years, a revolutionary improvement in valve check design has been effecting revolutionary savings in pulling and valve-check replacement costs. Not a single user has failed to reorder. An iron-clad guarantee provides for the return of your money if the NO-CO-RO Drop and Seat does not outlast and out-perform any two balls and seats you have ever used.

So impressive an array of facts calls for action! Try the NO-CO-RO Drop and Seat once; a surprise in valve-check economy awaits you. Each of our three offices is prepared to give you prompt and efficient service.

NORRIS BROTHERS, Inc.

Robinson, Illinois Fort Worth, Texas
Owensboro, Ky.

SPEED

READ these —FACTS on Fast Drilling

(Patent Applied for)

APPLEMAN GUMBO BITS are time savers in rotary drilling because of:

Self-Sharpening cutting edges; front edges hard-surfaced, permitting wear on back to retain cutting edges. A decided cutting effect on the side walls of the well is given, rather than the scraping action of the average fish-tail.

Speed also comes from the fact that wells are "bored to size" and are effectively and immediately mudded-up. The benefit of a short shank bit is given without it being a short shank bit.

There is no whipping effect, the displacement of the bit being reasonably large.

APPLEMAN GUMBO BITS so perfectly drill the hole that seldom, if ever, is it necessary to ream. Ask the many big company users in wells of 3600 feet and over.

Will be pleased to furnish names of prominent users upon written request

B.K.APPLEMAN
BEAUMONT, TEXAS

SQUEAKS FROM THE BULL WHEEL

It happened at Christmas time, about two Yuletides ago. The Woman With the Skirts All the Way Down to Here, who peddled copies of Birth Control in front of where the Paramount Theatre now stands, was absent from her regular post. The man who sells copies of the Matrimonial News near by (who is her husband) was substituting.

A frequent and friendly passer-by missed the woman. "Where's your wife tonight?" he asked.

"She's home, havin' a baby," was the response.

Liza and Fannie were discussing their Sunday night dates.

"Yes, mam, I done had me a neckin' party last night!"

"Neckin' party? Law, chile, don't you know them is out of style? They had them four thousand years ago."

"How you know they had them four thousand years ago?"

"'Cause my mammy done told me that the Bible says that King Solomon took the Queen of Sheba into the banquet hall and he fed her wine and nectar."

Wife: "Oh, you needn't think you're so wonderful. The night you proposed to me you looked absolutely silly!"

Husband: "A coincidence. The fact is, I was absolutely silly!"

"My girl says she thinks I'm a wit."

"Well, she's half right."

On the verge of bankruptcy a distracted business man was amazed by his wife's announcement that she could help him out with $100,000 she had secretly saved.

"Where in the world did you get all that money?" he demanded in pleased astonishment.

"Why," said she, "every time you kissed me I put a dollar in the saving fund."

"Good night!" he ejaculated. "If I had done all my kissing at home, I'd be a millionaire!"

Sandy (who has won a 50 to 1 shot): "D'ye mean t' say I've won a' this money just for puttin' doon five shillings?"

Friend: "Yes, of course."

Sandy: "Ma conscience! Tell me, mon, how long has this sort of thing been goin' on?"

The other day I met the sweetest young lady. She was in the lobby of a hotel, and as usual, we started a conversation about the weather. The girl said:

"Do you know, I find it so much colder up here than back home. There I wore light garments all winter, but since coming here I have had to put on heavier clothing. I'm from Georgia, you know."

"Is that so?" I said politely, to show my interest. "I'm from Missouri."

She showed me a look I'll never forget.

George, are you married?

"No, suh, boss, no, suh. Ah makes my own living."

Jones rang the bell at the new doctor's house. The doctor's wife answered the ring.

"You wish to see the doctor?" she said. "Couldn't you come tomorrow morning?"

"Why," said Jones, "isn't the doctor in?"

"Oh, yes, he's in," said the young wife wistfully, "but you're his first patient, and I'd like you to come as a surprise for him tomorrow. You see, it's his birthday."

A worried looking farmer drove into town, tied his team, and headed for the family doctor's office. Without preamble he began:

"Doc, the first time you're out our way I wish you'd stop and see my wife."

"Is she sick?" asked the man of pills and potions.

"Not exactly."

"What's the trouble, then?"

"Well, this morning she got up at the regular time, about 4 o'clock, milked the cows, got breakfast for the hands, done her house work, churned, and along about 10 o'clock she said she felt a little tired. I expect she needs a tonic, or something."

Smiff—That fellow is too slick for me. Sold me a lot that was two feet under water. I went around to demand my money back.

Bjones—Get it?

Smiff—Get nothing. He sold me a second-hand gasoline launch and a copy of Venetian Life by C. D. Waters.

"Yes," said the specialist, as he stood at the bedside of the sick purchasing agent, "I can cure you."

"What will it cost?" asked the sick man faintly.

"Five hundred dollars."

"You'll have to shade your price a little, replied the purchasing agent; "I had a better bid from the undertaker."

The new "stenog" looked like a million dollars. "Class was written all over her. The office force in accord acclaimed her "Some Dame."

Then she opened her velvet lips and said to the office boy: "Say, bozo, ain't there no carbon paper around this dump?"

After terrific struggles, the freshman finally finished his examination paper, and then, at the end, wrote:

"Dear Professor: If you sell any of my answers to the funny papers, I expect you to split fifty-fifty with me."

"How much does it cost to run your car, Tom?"

"I can't say how much it costs to run it, but is has cost me over $50 to leave it standing still."

"Favorite of the Oil Fields"

UNRIVALLED for SERVICE

FENWICK-REDDAWAY MFG. CO.

Newark, N. J.

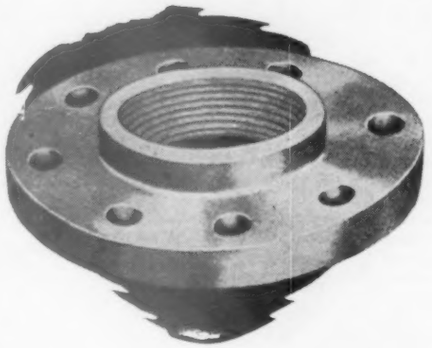
CAMEL'S HAIR, COTTON and LINEN PRODUCTS

Mid-Continent Representative

A. F. Campbell

Tulsa, Okla.
Phone 2-1117

Forged Steel Flanges



Standard - Medium - Extra Heavy

We maintain a large and complete stock in sizes up to and including 12", and are in position to supply your needs immediately. Write for complete dimension sheet.

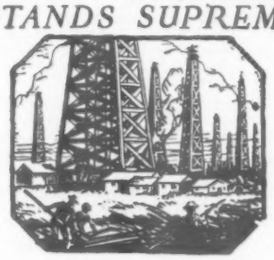
Maintenance Engineering Corporation

Preston 2274 P. O. Box 1402

HOUSTON, TEXAS

ASCO STEEL

STANDS SUPREME



Every step in the production of Asco Steel is watched closely. From the selection of the raw materials to the finished product, the first thought always is to produce a steel that will give the best results to the makers of Oil Well Tools. Can we help you to produce better tools?

DISTRICT OFFICES:

503 Phil Tower Bldg., Tulsa, Okla.

541 McCormick Bldg., Chicago, Ill.

THE ANDREWS STEEL CO

NEWPORT KENTUCKY

TYLER

Boiler Tubes

Charcoal Iron
for bad water conditions—

Lapweld Steel
for good water conditions—

For long tube life.

The Tyler Tube & Pipe Co.
Washington, Pa.

Texas Stock—Harrisburg Pipe and Pipe Bending Co., Houston, Texas

Oklahoma Stock—Harrisburg Supply Co., Tulsa, Oklahoma.

INDEX TO ADVERTISERS

J. S. Abercrombie Company .....
Ajax Iron Works .....
Ala, Haasenstein & Vogler 98
Alco Oil Tools Company .....
Allis-Chalmers Manufacturing Company
Allsteel Products Manufacturing Co...
Alten's Foundry & Machine Works ..
Aluminum Company of America.....
American Association of Petroleum Geologists .....
American Cable Company .....
American Hammered Piston Ring Co.
American Iron & Machine Works ....
American Telephone & Telegraph Company .....
American Steel Works .....
American Well Works 82
Andrews Steel Company 105
B. K. Appleman 104
Paul Arbon & Company .....
Ash Grove Lime & Portland Cement Company .....
Askania-Werke, A. G. .....
Athey Truss Wheel Company .....
Axelson Machine Company 87

Baash-Ross Tool Company 60-61
Baker Oil Tools, Inc. .....
Baldwin Chain Company .....
Barber-Greene Company .....
William S. Barnickel & Company.... 98
Bartlett Hayward Company 9
Bartlesville Supply Company .....
Beaumont Iron Works .....
Beebe Brothers ..... .72
Bessemer Gas Engine Company .....
Bethlehem Steel Company .....
Boykin Machinery & Supply Company
The Brewster Company 49
Bridgeport Machine Company .....
Broderick & Bascom Rope Company..
Buckeye Traction Ditcher Company..
Buffalo Bolt Company .....
Burns Tool Company .....
Butler Manufacturing Company .....
A. M. Byers Company 12
Byron Jackson Pump Company 17

Cameron Iron Works .....
Philip Carey Company 5
Central Alloy Steel Corp. .....
Chain Belt Company .....
Chicago Bridge & Iron Works .....
Chicago Pneumatic Tool Company ... 16
Clark Brothers Company 14
Climax Engineering Company .....
Colona Manufacturing Company 79
Columbia Nut & Bolt Company .....
Continental Motors Corporation .....
Continental Supply Company .....
Fred E. Cooper 91
Crescent Belt Fastener Company ....
Cyclone Fence Company .....

D. & B. Pump & Supply Company ...
Darling Valve & Manufacturing Co...
E. M. Dart Manufacturing Company..
Diamond Drill Carbon Company 94
Disc Bit Division Byron Jackson Pump Company .....
Drane-Humphrey Company, Inc. .....
Dunn Manufacturing Co. .....
E. I. du Pont de Nemours & Co. Inc.

Economy Pump & Oil Tool Company
E. H. Edwards Manufacturing Co. ....
Electric Controller Manufacturing Co.
Elliott Core Drilling Company .....
Emsco Derrick & Equipment Company 53

Fenwick-Reddaway Manufacturing Co. 105
Fort Worth Laboratories 98
Franklin Valveless Engine Company ..
Freeman Thompson Shoe Co..... 98
Frick-Reid Supply Corporation 93

Gardner-Denver Company 91
Gaso Pump & Burner Manufacturing Company 3
General Electric Company .....

B. F. Goodrich Rubber Company ....
H. P. Gott Manufacturing Company .. 94
Gray Tool Company .....
Guiberson Corporation 45
Gulf Caribbean Steamship Company..
Gulf Refining Company 89
Gulf States Utilities Company .....

Halliburton Oil Well Cementing Co...100
Hardway & Cathey 98
Erle P. Halliburton Company .....
Hayes Stellite Company .....
Harrisburg Pipe & Pipe Bending Company .....
Harrisburg Pipe & Pipe Bending Company of Texas .....
Hazard Wire Rope Company .....
Hercules Motors Corporation .....
Hercules Supply Company .....
Hercules Tool Company .....
Heydrick Mapping Company 98
Hill, Hubbell & Company .....
Hinderliter Tool Company .....
Hirsch, Brown & Susman 98
Houma Chamber of Commerce .....
Charles N. Hough Manufacturing Co. 72
Houston Engineers .....
Hughes Tool Company .....Front Cover and Fourth Cover
Hyatt Roller Bearing Company .....
Humble Oil & Refining Company ....

Imperial Royalties Company .....
Ingersoll-Rand Company 38
International Derrick & Equipment Company 34
International Supply Company .....
Interstate Trust & Banking Company

Jarecki Manufacturing Company ....
Jensen Brothers Manufacturing Co....
S. M. Jones Company 4
Kennedye-Plumb Corporation .....
Kerotest Manufacturing Company ....
Keystone Pipe & Supply Company ... 82

Landis Machine Company .....
Larkin & Company .....
Layne & Bowler Company 15
LeBus Rotary Tool Works .....
Robert E. Lee Hotels .....
Lincoln Electric Company.....
Linde Air Products Company .....
Link-Belt Company .....
Louisiana National Bank .....
Lucey Products Corporation 7
Ludlow Valve & Manufacturing Co... 69

Maintenance Engineering Corporation..105
Magnolia Petroleum Company 97
J. H. McEvoy & Company.....
Maloney Tank Manufacturing Co. 70 & 96
McCollum Exploration Company 98
Manzel Brothers Company .....
Martin-Loomis Corporation .....
Martin Wagon Company 73
Phillip Maverick .....
Mead Morrison Company .....
Samuel L. Mellon .....
Metric Metal Works 8
Miller Combination Bailer & Pump Company .....
Robert J. Miller Company .....
Mission Sales Company 11
Lee C. Moore & Company 75
Munger Oil Information Service .....
Murray Brooks Hardware Company..
Murray Tool & Supply Company 63

National Petroleum Engineering Co....
National Supply Companies 13
National Transit Pump & Machine Company 41
Norris Brothers 103
Norvell-Wilder Hardware Company...
R. D. Nuttall Company .....
Nye Tool & Machine Works.....

O'Brien Steel Construction Company..
O. C. S. Manufacturing Company....
Oil Well Supply Company 18
Oklahoma Gas & Electric Company...
Oxweld Acetylene Company .....

Parkersburg Rig & Reel Company....
Patterson-Ballagh Corp. 57
Pattin Brothers Company .....
Peden Iron & Steel Company..... 70
Penberthy Injector Company .....
Petroleum Engineering University.....
Petroleum Rectifying Company .....
Pittsburg Equitable Meter Company...
Pittsburgh Steel Products Company....
Pratt & Whitney Company.....
Price, W. A. .....

Reading Iron Company 85
Reed Roller Bit Company .....
Regan Forge & Engineering Co..... 65
Joseph Reid Gas Engine Company....
Republic Supply Company .....
Republic Iron & Steel Company..... 95
Rhode Island Fitting Company.....

Safety Pulling Machine Company..... 74
Shaffer Tool Works .....
Sinclair Refining Company .....
Skelly Oil Company .....
S-K-F Industries .....
A. O. Smith Corporation .....
Smith Separator Company 81
H. C. Smith Manufacturing Company..
Howard Smith Company .....
South Chester Tube Company .....
Southern Blue Print & Supply Co..... 98
Southern Engine & Pump Company..
Southern Mill & Manufacturing Co.....
Spang & Company .....
Spang Chalfant & Company.....
Standard Steel Works .....
Standard Supply & Hardware Co..... 84
Stanley Belting Corporation .....
Star Drilling Machine Company.....
St. Charles Hotel 98
Jesse R. Stone 98
Sullivan Machinery Company .....
Sweetwater Board of City Development

Taubman Supply Corporation .....
Templeman, Kenley & Company.....
Texas Creosoting Company.....2nd cover
Texas Cyclone Fence Company.....
The Texas Company .....
Texas Power & Light Company.....
Timken Roller Bearing Company.....
Texas Sand & Gravel Company..... 98
Titusville Iron Works .....
Trimont Manufacturing Company.....
Trumble Gas Trap Company.....
Twin Disc Clutch Company.....
Tyler Tube & Pipe Company.....105

Union Carbide and Carbon Corporation 83
Union Wire Rope Corporation...3rd cover
United Iron Works .....
United States Torpedo Company..... 82

Victaulic Company of America.....
The Vez Company 33

Waukesha Motor Company .....
John F. Weinzierl 98
Westinghouse Electric & Manufacturing Company 71
Wichita Falls Motor Company.....
West Texas Utilities Company.....
Wickwire-Spencer Steel Company..... 73
Wico Electric Company 67
Wiemann-Kemmerer-Wright Company. 6
J. H. Williams & Company .....
Williamsport Wire Rope Company....
Wilson Oil Tools Corporation..... 10
Wilson-Snyder Manufacturing Co.....
Wilson Supply Company .....
W-K-M Company .....
T. T. Word Supply Company.....
Wright Manufacturing Company.....

Yale & Towne Manufacturing Co.....
Young Engineering Corporation.....

The Unanimous report of UNION Users Seems to be "Giving Perfect Satisfaction"

The above illustration shows the UNION Wire Line used on Phillips Petroleum Company's well No. 1 Bob Olson, in Gray County, Pampa, Texas, field. The men are, left to right, H. A. Wyckoff, driller; John Banks, tool dresser, and R. I. Watkins, Union Wire Rope Corp.

The report from this crew—"line giving perfect satisfaction"—seems to be the *unanimous* report from UNION Wire Line users everywhere.

UNION Wire Lines give exceptional service in the oil fields—where usage is severe in the extreme—because each line is designed especially for its particular job by practical oil men who know what oil industry wire lines must do and endure. These wire lines are produced entirely within our modern factory, where UNION engineers have every facility for maintaining the highest standards of quality and uniformity.

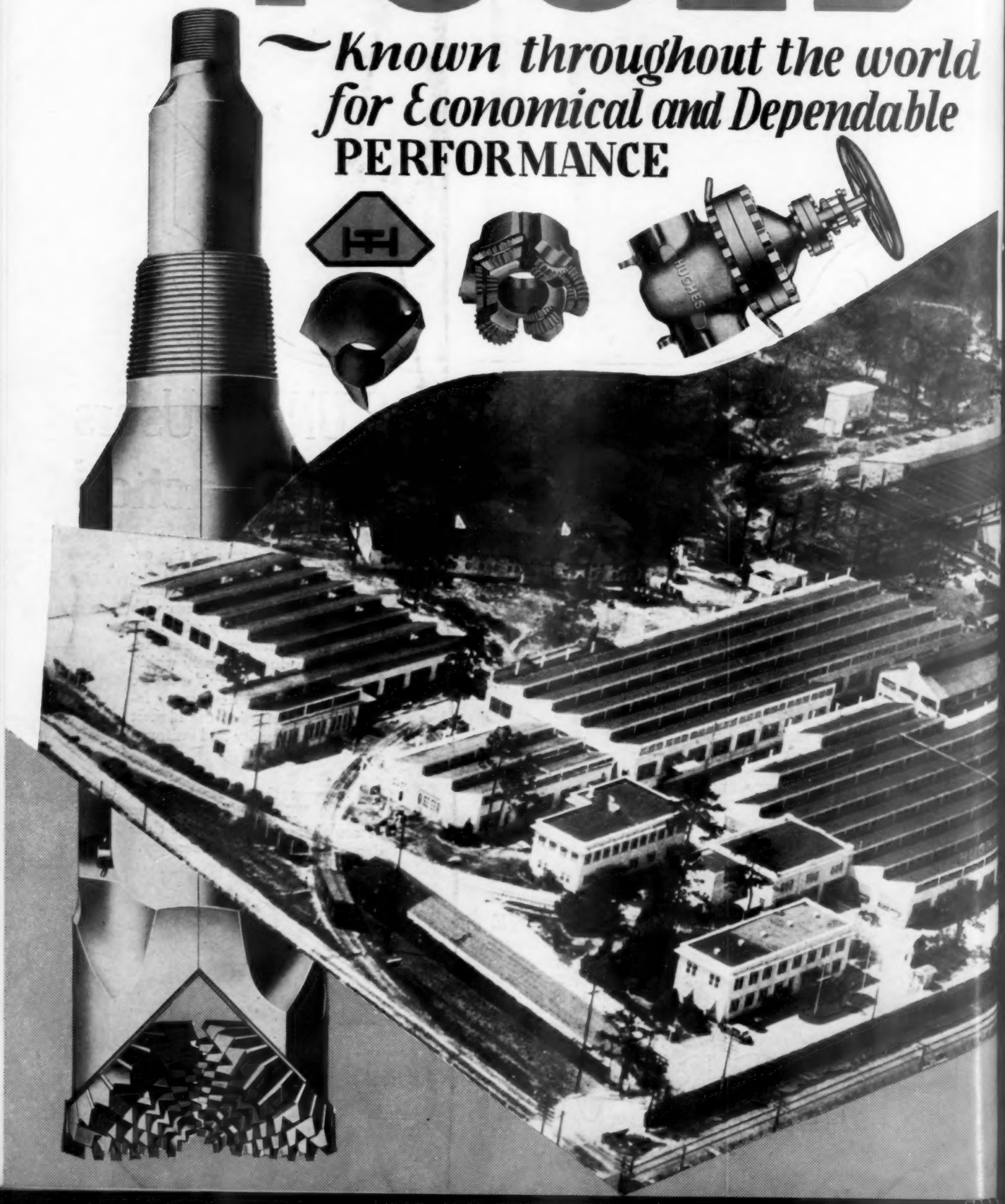
TRADE MARK

We suggest that operators put UNION Wire Lines to the test of actual service to discover their dependability and true economy.

UNION WIRE ROPE CORPORATION
3 North Madison Avenue, Tulsa, Oklahoma

JARECKI MFG. COMPANY
Oil Country Distributors, Stocks at all Stores
Oil Country Sales Office: 820 Kennedy Bldg., Tulsa
Factory: 21st and Manchester Avenue, Kansas City
Branch Offices and Warehouse: 515 22nd St. North, Portland, Ore.

UNION WIRE LINES

HUGHES TOOLS

~Known throughout the world for Economical and Dependable
PERFORMANCE